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ABSTRACTS

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ABSTRACTS

(The titles which are set in bold-face are intended as "scanning titles" for ease in classifying and filing. Where these are not substantially the authors' titles the exact titles are set in parentheses.)

1—FIBRES AND THEIR PRODUCTION

(A)—MINERAL

Glass Fibre. A. M. Robertson. *Brit. Rayon & Silk J.*, 1950, **27**, December, 63-64. An account is given of an address to the Coventry Textile Society, followed by a discussion. Manufacturing methods are described, and some new applications are referred to. **C—1A.**

Glass Fibre for Textile Application. ("Textil-Glasfäden.") P.-A. Koch. *Text. Rdsch.*, 1950, **5**, No. 9, 369-372; *Glastechn. Ber.* 1948/9, **22**, 226-228. The maximum diameter of a glass fibre for use in the textile industry is limited by brittleness to about 12 μ. The history, manufacturing methods (with diagrams) and raw materials, chemical composition, physical, chemical and mechanical properties, applications, master patents (in Germany), and bibliography are presented in concise form. **C—1A.**

(B)—ANIMAL

Preparation of Silk Gut in the Commonwealth. F. O. Howitt. *Col. Plant & Animal Prod.*, 1950, **1**, No. 1, 52-56. Examples of silk gut (made from silk glands) from the Bahamas, South India, and Kent, were compared with normal Spanish production. The limited data available seem to show that the Commonwealth gut does not attain the degree of regularity required for good grade fishing casts. It is suggested that further investigation of the conditions of pre-treatment, and of the finishing treatment of the drawn gut, is required. **C—1B.**

Animal Hairs: Histological Structure of the Scale Layer. ("Über den histologischen Aufbau der Schuppenschicht von tierischen Maaren.") H. Haselmann and H. Zahn. *Melliand Textilber.*, 1951, **32**, 1-6. There is analogy in form and size between the fine, longitudinal structures inside the scale cells of wool, which so far have been detected only by means of the electron microscope, on the one hand, and the parallel ridge reliefs on the cells of the surface epithelial layers of the skin, on the other hand. The strip-like structures of the epithelial cells are closely connected with the tonofibrils, epithelial fibres or protoplasmic fibres. Wool was heated with formamide and treated with pancreatin. The insoluble residue consists of intermediate membranes and parts of the scale cell layer. Similar structures could be detected with the phase contrast microscope. The longitudinal elements ("fibrillæ") running parallel to the fibre direction are about 200 mμ thick and are arranged in a lateral period of about 0·5-0·6mμ. The unity of the individual cells in the scale layer of wool and other animal hairs probably depends on a partially continuous system of fibrillæ and on intracellular bridges, as was assumed by Müller (*J. Textile Institute*, 1939, **30**, A657). It is emphasised that the scale covering of animal hairs, in spite of the coalescence of the cells at certain points, is not a continuous sheath, but consists of individual flat cells, which overlap to a greater or less extent. Müller (*loc. cit.*) established that the individual scale cells consist of different layers. It appears inappropriate to use the same nomenclature for these layers of individual cells as for the complete scale covering. **W—1B.**

(C)—VEGETABLE

Cotton Breeding in India. R. Balasubramanian. *Annual Report*, 1947, 17 pages (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 526-527). The report describes the work of the Cotton Breeding Station, Coimbatore, for the year ending 30th June, 1947. **C—1C.**

Cotton in Hungary: Cultivation Experiments. Dšk. *Interagra, Prague,* 1949, 8-10, 419-20 (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 526). Selection work and varietal trials at Seutes in Hungary are reported. C—**1C.**

Cotton Varieties in Mozambique. ("Variedades de algodão cultivadas em Moçambigue.") A. Quintinilha, M. G. Beatriz and L. S. de Eça. *Trab. Cent. Invest. Cient. Algodoeira, Lourenço Marques,* 1948, **1**, No. 6, 1-56 (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 527). A botanical classification of varieties grown in Mozambique is given, with an account of their distribution and details of fibre quality. C—**1C.**

Crops for Cotton Rotation in the Sudan. M. F. Rose. *Emp. Cotton Growing Rev.*, 1950, **27**, No. 4, 261-276. New roads and more water pits in the Southern Jebels area of Kordofan may lead to a more intensive cultivation, and danger of soil exhaustion. Possible field crops are listed and discussed, and data are given demonstrating the value of a legume preceding the cotton crop. The rotation cotton-dura-cowpea is recommended, except on worn out land, where the primitive system of soil regeneration under *harig* grasses is to be preferred. C—**1C.**

Dyeing Cotton Seed. T. N. Jewitt and K. R. Middleton. *Emp. Cotton Growing Rev.*, 1950, **27**, No. 4, 261-276. Trials were made of 16 dyes for cotton seed, to help illiterate cultivators to keep two strains isolated. It was found that Congo Red, at 0·1 per cent. of the weight of seed, dyed the seed distinctively, did not affect the action of Abarit B against "Blackarm", and was unchanged at 67° C. C—**1C.**

Improved Cotton Varieties. IV. J. F. O'Kelly. *Agron. J.*, 1950, **42**, 53 (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 525). Descriptions are given of the American cottons, Empire and Lankart-57. C—**1C.**

Natural Selection in Egypt's Cotton Crop. W. L. Balls. *Emp. Cotton Growing Rev.*, 1950, **27**, No. 4, 243-259. The workings of the seed-control law, the occurrence of Hindi weed cotton (*Gossypium hirsutum*, var. *punctatum*), and the importance of spinning-test control as a complete preventative of quality deterioration within a seed-renewal system, are discussed. An appreciation is given of the value work on the spinning test by H. A. Hancock. C—**1C.**

New Cotton Strains in Southern Manchuria. Y. Katayama and I. Fujiwo. *Jap. J. Genet.*, 1947, **22**, Nos. 5-6, 72-77 (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 526). The development of two improved strains of Upland cotton at the Agricultural Experiment Station, Manchuria, is described. C—**1C.**

Oklahoma Cotton Varieties. I. M. Parrott, N. M. Gober, Jr., and J. M. Green. *Bull. Okla. Agric. Exp. Sta.*, 1950, No. B-343, 11 pages (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 529). Cotton trials are reported and varietal recommendations made for the different regions. C—**1C.**

Oklahoma Cotton Variety Tests, 1944 to 1948. I. M. Parrott, N. M. Gober, Jr., and J. M. Green. *Tech. Bull. Okla. Agric. Exp. Sta.*, 1950, No. T-37, 46 pages (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 529). A report is given of trials carried out at different places in Oklahoma. C—**1C.**

Test Results for Some Cotton Varieties. U.S. Department of Agriculture. *U.S. Dept. Agric. Prodn. Mrktg. Admin. Cotton Branch, Pamph.*, 1950, December, 7 pages. Tables are given, showing fibre and spinning test results on varieties grown by selected cotton improvement groups, and harvested in November and December, 1950. A later report will give a summary of all cottons tested in 1950. C—**1C.**

Flax. ("Le lin, plante à l'huile.") R. Mayer and F. Plonka. *Bull. Techn. Inform. Ingén. Serv. Agric.*, 1948, Nos. 28-29, 247-53 (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 530). This is a general discussion; reference is made to yields obtained from various flaxes in different countries, and to trials in progress at French breeding stations. C—**1C.**

Flax Production in Western Europe. K. Fröier. *Arsb. Svensk. Jordbr. Forsk.*, 1950, 49-59 (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 530). The organisation of flax production in Holland, Belgium, and northern France is described; Swedish methods are also referred to. C—**1C.**

(D)—ARTIFICIAL

Modified Polyvinyl Chloride: Properties of Fibres. ("Polyvinylchlorid.") F. Kainer. *Melliand Textilber.*, 1950, 31, No. 4, 255-260. The production of various types of fibre from chlorinated polyvinyl chloride and from copolymers of vinyl chloride with other polymerisable substances, for example, vinylidene chloride, acrylic acid or its esters, and acrylonitrile, is described. The principal properties are indicated. In some cases after-treatment improves fibres by bolstering up deficiencies such as poor light-fastness, and temperature-sensitivity. These after-treatments are also outlined. C—1D.

New Acrylic Type Fibre: Plans for Manufacture. Anon. *Rayon Synth. Text.*, 1950, 31, No. 11, 66. Plans for the construction of a factory for the production of a new synthetic fibre of the acrylonitrile type, are announced. This new plant of the Chemstrand Corporation is to be erected on a site in Alabama, U.S.A. C—1D.

Nylon Crimp Setting Machine. Turbo Machine Co. *Text. World*, 1950, 100, November, 178. A brief illustrated description is given of an automatic crimp setting machine for nylon staple or tow. C—1D.

Peanut Protein Fibres: Pilot Scale Spinning Plant. J. C. Arthur and H. G. Many. *Amer. Dyest. Rep.*, 1950, 39, No. 22, 719-722. The construction and operation of a pilot scale fibre spinning plant are described, and operating data are given for the production of peanut protein fibres. C—1D.

Polyvinyl-chloride Fibres: New Developments. ("Neue Entwicklungen auf dem Gebiete der Polyvinylchloridfasern.") F. Grabe. *Melliand Textilber.*, 1950, 31, No. 4, 261-262. The discovery that polyvinyl chloride that has not been after-chlorinated is soluble in a mixture of at least two organic solvents, one of which must be carbon disulphide, has led to the successful production of a fibre. The properties of this fibre are discussed, together with possible applications in textiles which include certain types of clothing, curtaining, and upholstery. C—1D.

"Rilsan": A New Superpolyamide from Castor Oil. ("Le Rilsan—Plastique B.") R. Dumon. *L'industrie text.*, 1950, 67, March, 106-108. An outline is given of the reactions involved in the manufacture of "Rilsan" from glycerine ricinoleate. Chemical, physical, and mechanical properties are briefly described, together with some possible applications of the filament, for example, in upholstery, and tapestry. C—1D.

Synthetic Fibres: Elongation During Preparation: Calculation. J. T. Hogan. *Amer. Dyest. Rep.*, 1950, 39, No. 22, 725. A nomograph is presented for calculating the degree of elongation of synthetic fibres during their production. C—1D.

Viscose Filtration Process: Critical Investigation. V. E. Gonsalves. *Rec. Trav. Chim.*, 1950, 69, No. 7/8, 873-895. A theoretical treatment of the viscose filtration process is presented, with a description of experimental work that has been carried out to test the theory. Particular attention is paid to the clogging of filters, and the method applied in practice at present for the determination of the "clogging constant" of "dissolver viscose" is criticised. C—1D.

Clothing and the Production of Artificial Fibres. ("Beitrag zur Frage der Kunstfasererzeugung.") Arnulf Sippel. *Melliand Textilber.*, 1950, 31, No. 6, 381-385. The paper opens with a discussion as to whether the fibre is the only means by which clothing of good warmth or coolness retention, and good protective qualities, can be obtained, since the production of a fabric *via* the fibre is costly and lengthy process. Though air content can be obtained by foaming a plastic mass, the resultant mechanical properties still leave much to be desired. Modern methods of fibre formation and production are reviewed in the light of the ultimate properties of the fibres, particular attention being paid to the stretch-spinning process. C—1D.

Delamare Rayon Fibre: Wool-like Viscose. ("Delamare-Zellwolle.") Anon. *Kunstseide u. Zellwolle*, 1950, 28, No. 4, 118. Photomicrographs are presented of Delamare type viscose staple-fibre and of wool, in which some resemblance to the scale surface of the latter can be seen in the former. The scale-like surface is produced by means of various types of vibratory apparatus (not described). C—1D.

Dialysing Apparatus in the Rayon Industry. ("Vergleich deutscher und amerikanischer Dialysier-Apparate für Natronlauge.") Anon. *Kunstseide u. Zellwolle*, 1950, **28**, No. 4, 127-128, 130. Operating costs of two main types of dialysing apparatus are compared. The Cerini type, which consists of an open box containing membrane bags made of cotton fabric, operates more economically than the Webcell apparatus, which is a form of filter-press containing parchment-paper membranes. C—**1D.**

French Polyvinyl Chloride Fibres. Anon. *Dyer*, 1951, **105**, No. 1, 46-47, 49, 51. The properties and uses of four polyvinyl chloride fibres—Rhovyl, Fibrovyl, Thermovyl, and Isovyl—are described. These fibres are produced in France by the Rhovyl Company, associated with the Rhodiaceta group. C—**1D.**

Orlon. ("Orlon-[Polyacrylnitril] Kunstseide.") P.-A. Koch. *Text. Rdsch.*, 1950, **5**, No. 10, 414-417; *Deutsche Textilgewerbe*, 1950, 505-507. This is a detailed but concise presentation of the development, raw materials, manufacturing methods, chemical composition, properties, industrial and other applications of "Orlon" polyacrylonitrile synthetic fibre. C—**1D.**

Rayon Cake Formation and Its Handling. ("Der Spulkranz und seine Verarbeitung.") Joh. A. Schulze. *Kunstseide u. Zellwolle*, 1950, **28**, No. 4, 119-120. The rayon cake is a handy unit which, were its dimensions and structure standardised, could be subjected to all appropriate processes without any further manipulation of the yarn. The mode of formation of a cake is briefly described, and the manner in which it should be handled in rewinding, *etc.*, is dealt with. C—**1D.**

Rapid Determination of Processing Characteristics of Wood-pulp Destined for Viscose Production. ("Eine Schnellmethode zur Bestimmung der Verarbeitbarkeit von Kunstfaserzellstoffen zu Viskose.") Werner Winkler. *Kunstseide u. Zellwolle*, 1950, **28**, No. 5, 153-155. It has been found that the Malachite Green method of determining the non-cellulose content (principally lignin) of unbleached wood-pulp can be applied quite readily to bleached pulp, even though the distinction between depth of shade is not so pronounced. The values obtained by the method bear a direct relation to the filtration and viscosity values of the regenerated cellulose. Details of the method are given and practical data presented. C—**1D.**

2—CONVERSION OF FIBRES INTO FINISHED YARNS

(A)—Preparatory Processes

Card Stripping Motion. Cia. Ama. Constant Card (Barcelona). *Text. Rec.*, 1950, **68**, November, 132-133. Details are given of a continuous pneumatic card stripping motion. This new attachment can be fitted to any standard type or make of carding engine, and operates on the card cylinder. C—**2A.**

Combing of Rayon Staple and the Use of a Double Top-comb. ("Das Kämmen von Zellwolle und die Verwendung doppelter Fixkämme.") A. Baumgartner. *Textil-Praxis*, 1950, **5**, No. 3, 157-158. The desirability of combing rayon staple in certain cases has been examined. The following advantages are suggested: the removal of any small fibre clusters; rendering the fibres even more parallel after carding; and the removal of any really short fibres present. The use of a double top-comb is not considered advantageous on account of rapid clogging between the combs. C—**2A.**

Condenser Carding and Spinning. R. Stansfield. *Text. Whly*, 1951, **47**, No. 1191, 106, 108; *Text. Merc.*, 1951, **124**, No. 3225, 161-162. Extracts from a lecture on the processing of cotton waste are presented. After stressing the present importance of this section of the cotton industry, the author deals in turn with some of the machines used in the carding and spinning of cotton waste. C—**2A.**

Control of Automatic Hopper-Feeder Delivery. ("Regularisation du débit de la chargeuse en filature coton.") L. Defer. *L'industrie text.*, 1950, **67**, No. 3, 105. In order to ensure a more homogeneous and cohesive lap from an automatic hopper-feeder, it is suggested that the feeder should contain two converging endless belts which propel the charge towards the horizontal conveyor. C—**2A.**

New Opener for Baled Cotton. U.S. Dept. of Agriculture, S. Regional Research Laboratory. *Text. World*, 1950, **100**, November, 176. Brief details (with illustrations) are given of an improved machine for opening and "fluffing" baled cotton. The machine is expected to be particularly useful for processing mechanically picked cotton which contains a relatively high percentage of trash. C—**2A.**

Double Carding. ("Aus der Praxis der Baumwollspinnerei IX. Die doppelte Kardierung.") A. Friedrich. *Textil-Praxis*, 1950, **5**, No. 4, 219. The practicability of double-carding cotton is briefly discussed. The process is sometimes used when no combing machine is available. Only the better qualities of cotton are suitable for this treatment. It is suggested that the procedure has little or no advantage over the system of carding and, say, a 5–7 per cent. combing. C—**2A.**

Fibre Distribution in the Sliver. ("Die Faserverteilung in Bändern und Bandausschnitten.") H. Köb. *Textil-Praxis*, 1950, **5**, No. 4, 214-216. A description is given of a new graphical method for analysing the number of fibres of different length to be found in a given section of sliver or spun yarn, this section being the distance between the drafting rollers or any desired cut from the yarn. The method shows the relationships between staple diagrams, the drafting process (the influence of floating fibres), and fibre length distribution. C—**2A.**

Inclusion of Crushing Rollers in the Carding Process. ("Wirtschaftliche Verwendung der Zermalmapparates in der Reisswollspinnerei.") Georg Liebig. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 18-19. The inclusion of suitably adjusted crushing rollers when subjecting shoddy, cotton, and the like to the carding process, eliminates hard impurities without damaging the fibres. Details are given. C—**2A.**

Uniformity of Card Sliver. ("Einfluss der Materialbeschichtung auf die Gleichmässigkeit des Krempelbandes.") W. Wegener. *Melliand Textilber.*, 1950, **31**, No. 2, 90-93. Factors affecting uniformity of hank number in the sliver obtained from the carding engine, are surveyed, and particular attention is paid to methods of hand-feeding. It is shown mathematically that greater evenness is obtained if the boundary between consecutive lots on the feed-band lies obliquely to the axes of the card cylinders. C—**2A.**

Whitehead Sliver-Condenser. H. Whitehead and Co. (Oldham) Ltd. *Text. Whly*, 1951, **47**, No. 1194, 286, 288. Some information is given concerning the Whitehead sliver condenser (or compressor) for the front calender rollers of carding engines and draw frames. The device produces a smaller diameter sliver, enabling the sliver can to hold, on the average, 25 per cent. more sliver. Other sliver condenser systems that have been used from time to time are briefly mentioned. C—**2A.**

Oiling: Mill Management and Wool Oils. *Amer. Wool and Cotton Rep.*, 1950, **64**, No. 52, 10-12,44-45. A scientific approach to the application and selection of proper wool oils is shown to result in substantial savings and finer fabrics. Analysis of mill operations by a specialist is recommended. Information may be obtained on various factors, *e.g.* the decision as to how much oil and water apply, and supervision and instruction of blending room personnel in preparing and applying emulsions. A chart intended to help in choosing the most economical wool oil for any mill operation is included. Some suitable tests are suggested. W—**2A.**

Stripping of Rags and Wastes. *Wool Rec.*, 1951, **79**, 986, 989. A short review of the advantages and disadvantages of various chemicals used as stripping agents for rags. W—**2A.**

Weighing of Blends. Dial Automatic Scale Co. Ltd. *Wool Rec.*, 1951, **79**, 807. The Weyrite Dial Hopper Weigher consists of a hopper and scale. Compounding pointers on the dial of the scale are set for each weight of material to go into the blend. Indicating pointers are made to coincide with the compounding pointers for the different grades of wool until the blend is made up. The hopper is automatically discharged either sideways or to the floor below. W—**2A.**

Wool Sorting. *Amer. Wool & Cotton Rep.*, 1951, **65**, No. 6, 35. Costs have been lowered by instituting a work simplification programme for wool sorting and picking in an American mill. Bales are opened on one end of a conveyor belt, which carries the unrejected stock to the storage bins. The stock is automatically oiled in large trucks from which the pickers are fed. The picking

operation has been improved by lengthening the feed aprons to a minimum of 6 ft. and by blowing picked stock from lumpers to large-capacity storage bins or back to the pickers for further processing. Schematic diagrams show the flow of materials in the sorting and picking rooms. W—**2A.**

Wool Carding. *Wool Rec.*, 1951, **79**, 959-960. The setting of the strippers and doffers in a carding set is discussed with reference to the requirements of the material being processed. W—**2A.**

Drafting: Superdraft Porcupine Drawing Frame Eliminates Worsted Processes. Textile Machines Isotta Fraschini S.P.A. *Text. World*, 1951, **101**, 163. An apron supports and transports the sliver from the back rollers to the nearest point of the porcupines, thus giving the fibres constant control. The speed, even with short staple wool, can be increased from 26 or 27 to 31 yards per minute: the draft can be increased from 4·2-4·5 to 9 and 10. Sliver breakages are reduced to a minimum. Using this attachment, 40s metric count yarn has been spun with only 5 drawing passages. W—**2A.**

Drawing: Bobbin Drag in Open Drawing. *Fibres*, 1951, **12**, 110. Drag requirements and washering are briefly discussed. W—**2A.**

Carpets. *Platt's Bull.*, 1951, **7**, 125-143. Old and new methods of carding carpet yarns are compared. The two methods differ essentially in the replacement of the treble scribbler and double carder by a double scribbler, and the substitution of a tape condenser for the double ring doffer. Diagrams of machines and details of recommended roller settings are included. The continuous spinning system is considered supreme. Photographs of some of the newer looms are included. Subjects mentioned include the "Worth" split shot mechanism, which inserts all the wefts in one operation, several factors resulting in high speed weaving, electrical stop motions, and an indicator for immediate fault location. W—**2A.**

(B)—SPINNING AND DOUBLING

Estimation of Ring-spinning Frame Efficiency. ("Die inner- und überbetriebliche Leistungskontrolle der Ringspinnmaschine in der Baumwollspinnerei.") F. Walz. *Textil-Praxis*, 1950, **5**, No. 3, 153-156. A method is indicated for determining the production-efficiency of a ring-spinning frame, in relation to both internal and external organisation of production control. After giving a procedure for determining the net and theoretical efficiencies of a machine, regard being paid to count and quality of material being processed, the application of the results to internal economy, and to safeguarding the spinner in making quotations to customers, is discussed. C—**2B.**

Influence of Traveller Friction on Regularity of Yarn. ("Les conditions de frottement du curseur sont aussi une condition de régularité du fil.") C. Goderville. *L'industrie text.*, 1950, **67**, March, 101-103. The importance of obviating irregularity in frictional forces acting on the traveller, due to variations in relative positions with respect to the ring, is discussed. Means of overcoming such irregularities by modification of ring and traveller design are described. C—**2B.**

Over-all Mill Controls. R. Ashner. *Rayon Synth. Text.*, 1950, **31**, November, 45-48, 50; *Text. Merc.*, 1951, **124**, No. 3223, 57-67 (6 pp.). The Rudolph Ashner system of over-all mill control which has been installed in a number of textile mills in America and Canada is claimed to produce increased efficiency and production. The theory of mill control, its practical application, its installation, operation, and results are discussed. C—**2B.**

Rationalised Production in the Spinning Mill. ("Rationelle Produktionserfassung und -auswertung in der Drei- und Mehrzylinderspinnerei als Mittel zur Erzielung der optimalen Leistung und praktische Hinweise zu ihrer Verwirkung.") F. Pflugfelder. *Melliand Textilber.*, 1950, **31**, No. 3, 166-170; No. 4, 238-241. Ways and means of raising the output of a spinning mill using existing equipment are described, and methods for rationalising the flow of work, and for relating factors which influence production, are proposed. (From Author's summary.) C—**2B.**

Rayon Direct Spinning Frame. T. Takagi. *Rayon Synth. Text.*, 1950, **31**, No. 11, 31-32, 44; Anon. *Text. Merc.*, 1951, **124**, No. 3224, 103-104. Some details are given of the construction and performance of a Japanese direct spinning frame

for rayon tow, known as the "K.T." type. It is referred to as a "double draft zone" system since breaking of the tow and drawing are carried out in two consecutive processes. C—2B.

Re-designed Ring Spinning Frame. Richard Threlfall Ltd. *Text. Merc.*, 1951, **124**, No. 3222, 23-24. A brief illustrated description is given of a completely re-designed ring spinning frame. C—2B.

Ring Spinning Frame Drives: Automatic Regulator. Carter Gears Ltd. *Text. Mfr*, 1950, **76**, November, 548. A new automatic speed regulator for ring spinning machine drives is announced. C—2B.

Spindle Speed Control: The Stroborama Tachometer. Anon. *Time Study Engr*, 1950, **5**, No. 9, 295-298. In the apparatus described, the frequency of a series of flashes can be regulated until the moving spindle is seen as stationary. The speed then registered on the dial will be that of the spindle. No stoppage of machinery is necessary, both hands are left free, and 4 to 5 spindles can be observed at once, so that over 500 spindles can be checked in 10 minutes. The apparatus also enables such processes as bobbin formation to be followed in slow motion. C—2B.

Spinning Frame Operation: Observations on Time Loss. ("Erkenntnisse und Folgerungen aus vorgenommenen Arbeitsstudien an Ring- und Wagenspinnern in einer Kammgarnspinnerei.") W. Posselt. *Textil-Praxis*, 1950, **5**, No. 3, 150-152. Time losses originating in the operation of ring-spinning and mule-spinning frames have been investigated, and it has been found that the personal element, that is, willingness or capacity to cut time-loss, plays a considerable part. Attention to broken yarns takes up about 10 per cent. of total stoppage time, the remainder being occupied in cleaning, oiling, bobbin replacement, *etc.* Some workers will attend to such items as cleaning and oiling in between repairing broken threads, whilst others are content to treat such operations separately. The methods employed in making the observations are briefly described. C—2B.

Twist-Contraction Correction for Draft Gear Calculations. Anon. *Text. World*, 1950, **100**, November, 196. A chart is given by means of which estimations of draft gear, twist gear, and yards wound on a bobbin may be corrected for twist contraction. C—2B.

Waste Reduction in Textile Mills. J. L. Delany. *Text. Industr.*, 1950, **114**, November, 87-89. A brief account is given of the practices employed in an American cotton mill to reduce cotton waste. C—2B.

Winding and Doubling: Tension Control. ("La regulation de la tension du fil au dévidage et retordage.") R. Duval. *L'industrie text.*, 1950, **67**, April, 157-161. A means is described for counteracting variations in yarn tension, during winding or doubling, due to the gradual change in diameter of the supply package. The base of the spindle, on which the package is mounted, is attached to a fluid friction device in which the friction effect is automatically reduced as the package becomes lighter, thus enabling the latter to rotate more rapidly, and so maintaining an even tension. C—2B.

Yarn Vibration During Spinning. ("Garnschwankungen und Schwingungen.") R. Thun. *Melliand Textilber.*, 1950, **31**, No. 4, 236-238. The various sources and types of vibration to which a yarn is subjected during the spinning process, and their effect on the properties of the yarn, are discussed. The vibrations are usually periodic in character and occur, for example, along free, unsupported sections of the yarn, or where the bobbin is slightly eccentric; or again, in the drafting section if the draft roller perimeter is irregular or the roller itself eccentric. All, or any, of these can give rise to periodic property variations in the yarn. Methods of counteracting the causes of these defects are suggested. C—2B.

Casablancas High-drafting System. W. Andrew. *Text. Wkly*, 1951, **47**, No. 1194, 290, 292, 294, 296; No. 1195, 370, 372, 374. The various Casablancas high-drafting systems and their applications are described. Roller coverings are discussed with special reference to the "Casavon" cots. C—2B.

Effect of Twist on Processing Characteristics of a Yarn. ("Über den Einfluss der Drehung der Garne, insbesondere von Kunstseidengarnen, auf die Verarbeitung.") K. Ludwig. *Textil-Praxis*, 1950, **5**, No. 4, 216-219. An outline is given of the effect of the degree of twist on the characteristics of staple and filament yarns. Special attention is paid to rayon filament yarns, which are treated in greater

detail. A fairly large degree of variation in the twist in rayon filament yarn is to be expected and only in the case of really large differences should complaints be made. The many factors conducive to such variations in twist are indicated. The different degrees of twist required by the various applications of filament rayon, for example, crêpeing, are discussed, and their preparation and behaviour are described. C—**2B.**

"Perfect" Ring-spinning Frame. ("Die neue Perfect-Ringspinnmaschine.") Spinnbau G.m.b.H. *Textil-Praxis*, 1950, **5**, No. 5, 276-277; *Text.-Praxis (Eng./Span. Ed'n)*, 1950, 7-9. Constructional details are given of a ring-spinning frame, a novel feature of which is that the spindles move vertically whilst the rings remain stationary. The cleaner lay-out of the machine is illustrated by a composite diagram in which established design is compared with the new one. C—**2B.**

Processing of Long-staple Fibres in Cotton Spinning. ("Die Verarbeitung von Langstapelfasern in der Baumwollspinnerei unter besonderer Berücksichtigung der PHRIX-Kräuselfasern SBK 2,75 den. und SBK supra 3,75 den. 60 mm.") Hugo Nuding. *Melliand Textilber.*, 1950, **31**, No. 6, 391-395. The advantages of including longer staple fibres in a yarn for knitting, clothing and other end-products, are expounded, and in particular, the incorporation of crimped cotton-fibres is recommended. The adjustments required in the various processes are discussed whilst, at the same time, the limits of fibre modification are indicated, for example, in the case of drafting, where either too little or too much cohesion within the fibre gives rise to various difficulties. Data are given concerning the properties of the yarns and their processing characteristics. C—**2B.**

Rate of Spinning: Determination. ("Ausnützung der Spinngrenze in der Kammgarn-Ringspinnerei.") R. Hofmeister. *Text.-Praxis*, 1950, **5**, No. 5, 275. The fastest rate of spinning is determined by the average number of yarn-breaks which can normally be dealt with by the spinner. A method for preparing a graph showing the fastest rates for a given quality of cotton at various counts is described. An alternative graph compares maximum spinning rates of various qualities with a given count. C—**2B.**

Scaife Lifter-Motion for Spinning Frames. R. S. Audley. *Fibres*, 1951, **12**, No. 1, 15-16. A description is given of the Scaife lifter-motion with brief mention of adjustment and setting. C—**2B.**

Spinning on Cotton System: Application of Index of Irregularity. R. Temmerman and L. Hermanne. *J. Textile Institute*, 1950, **41**, No. 11, pp. T411-421. It has previously been found that a parameter K, the index of irregularity $\left(= \frac{\text{measured coefficient of variation}}{\text{ideal coefficient of variation}}\right)$, decreases asymptotically to the value 1 during successive combings of wool fibres. An investigation has been made to see if K assumes an analogous progression of values in spinning on cotton machinery. Using the Uster tester the irregularities of slivers, rovings, and yarns have been measured for samples of Peruvian and Congo cotton and a staple fibre, "Swina". From these measurements values of K have been calculated. In interpreting the results the total index of variation, K_∞, is analysed into internal ($K_{int.}$) and external K ($K_{ext.}$), account respectively for the variations within and between definite lengths. C—**2B.**

Theory of Package Formation on the Ring-spinning Frame. ("Zur Aufwicklungstheorie der Ringspinnmaschine.") N. Reinfeld. *Melliand Textilber.*, 1950, **31**, No. 5, 313-317; No. 6, 388-391. A detailed mathematical treatment of the formation of a package on a ring-spinning frame is presented. Hitherto it has been considered sufficient to base the theory of winding on a ring-spinning frame on that of the fly-spinning frame, but this is, in fact, untenable since the resulting structure of the package is not similar in both cases. C—**2B.**

Twisting during Drafting on the Ring-spinning Frame. ("Über die Verzugsdrehung bei der Streichgarn-Ringspinnmaschine.") W. Frotscher. *Textil-Praxis*, 1950, **5**, No. 5, 277-279. Methods of applying a temporary reinforcing twist in the roving between the drafting rollers on a ring-spinning frame are briefly described, together with the friction factor which must be taken into consideration. A somewhat more detailed discussion on the amount of twist to be given, follows. C—**2B.**

Backing-off Chain on the Mule. "Larbreck." *Text. Merc.*, 1951, 124, 449-452. The control mechanism of the backing-off chain and associated motions is explained and illustrated. W—**2B.**

Woollen Ring Frame Spinning. ("Some Comparisons with the Mule.") *Wool Rec.*, 1951, 79, 529-530. The productive superiority of the ring frame is mentioned and the principle of the system is outlined. An improved twister tube unit is described and the speed of the travellers is briefly discussed. W—**2B.**

Aspects of Twist in Cap Spinning. R. S. Audley. *Fibres*, 1951, 12, 81-82. Factors affecting twist in cap spinning are discussed. If rovings are not stored after drawing, it is often necessary to harden the spinning twist, with consequently lowered output. A table shows a suggested relation between count, spinning twist (turns per inch) and tube speed. W—**2B.**

Slubs in Worsted Yarns. Wool Industries Research Association. *Wool Rec.*, 1951, 79, 873-4. Figures relating to the occurrence of faults in yarn, and obtained from surveys in mending rooms, are quoted. The main causes and remedies for slubs in worsted yarns are described. Special reference is made to piecening, clicking (feathering) tops, damaged faller pins, and accumulation of waste in faller pins. Mention is also made of neps and "long faults." W—**2B.**

Worsted Yarns: Manufacture. *Wool Rec.*, 1951, 79, 1068, 1071, 1073. Typical worsted yarns for weaving, hosiery manufacture and hand-knitting are described. A table gives the twists used for these three types of yarn. Manufacturing details are given for hosiery and hand-knitting yarns. W—**2B.**

Worsted Yarn Manufacture. *Wool Rec.*, 1951, 79, 796, 801. The Bradford and Continental systems of worsted yarn manufacture are briefly compared, special reference being made to the relative merits of each system and to the characteristics of the yarns and fabrics produced. W—**2B.**

"American" System Drawing Modifications. Whitin Machine Works. *Fibres*, 1951, 12, 110. The sizes of the roving frame rollers and the diameter of the spinning frame rollers have been increased. Fibres up to 7 inches long can now be satisfactorily processed, providing the mean length does not exceed 5 inches. W—**2B.**

Machinery Layout for American System. *Text. World*, 1951, 101, 200, 202. A layout is suggested for producing worsted yarn on the American system using pin drafters and Ambler Super-draft, at a cost of about 1½-2 cents per count, or 60-80 cents per lb., for 2/40 yarn. W—**2B.**

Spindle Drive in Multi-ply Twisting. *Wool Rec.*, 1951, 79, 947, 949. Features of efficient systems are discussed. W—**2B.**

(D)—Yarns and Cords

Twines, Cords and Ropes: Raw Materials and Manufacturing Processes. ("Die Erzeugung der Bindfaden, Ernbinde- und Seilgarne.") P. Beckers. *Melliand Textilber.*, 1951, 32, No. 1, pp. 10-18. A detailed account is given of the raw materials, processes, and machinery used in the manufacture of string, cord and rope to be used for a variety of purposes. The raw material, mainly hemp, is classified into hard and raw varieties and the properties according to source are indicated. The discussion on the processing machinery, for example, carding, spinning, and so on, is supported by several photographic and diagrammatic illustrations. C—**2D.**

3—CONVERSION OF YARNS INTO FABRICS

(A)—Preparatory Processes

"E & F" Mechanical Yarn Knotter. Ingfield Products. *Text. Wkly*, 1951, 47, No. 1190, 42; *Text. Merc.*, 1951, 124, No. 3222, 35. A new mechanical yarn knotter is announced. It is known as the "E & F" knotter, and is capable of tying two types of knots. C—**3A.**

Electronic Stop-motion. ("Le casse-fil electronique sera-t-il le casse-fil de l'avenir?") J. Colbin. *L'industrie text.*, 1950, 67, March, 171. A brief outline is given of the principle of an electronic device for detecting a broken end and for stopping the machine. It is particularly useful where the yarn used is hardly strong enough to bear the weight of drop wires heavy enough to operate an electrical circuit mechanically. C—**3A.**

Moulded-Plastic Bobbin for Nylon Yarn. Allentown Bobbin Works. *Text. World*, 1950, **100**, November, 175. A new moulded-plastic take-up bobbin designed to withstand the crushing force of nylon yarn has been introduced. C—**3A.**

Pirn Winding Machinery: A Review. G. Grogan. *Text. Merc.*, 1951, **124**, No. 3222, 25, 27. The functions of pirn winders are enumerated and the methods by which these functions are carried out are compared for some modern machines. It is pointed out that spindle speeds have outstripped developments in yarn tension control devices, and some possible mechanical devices which offer a partial solution to the problem are suggested. C—**3A.**

Yarn Preparation Machinery: Developments. Anon. *Text. Rec.*, 1950, **68**, November, 113-119. Modern trends in the design of yarn preparation machinery are discussed by reference to machinery shown at the *Textile Recorder* Knitting Machinery Exhibition. The review covers uptwisters, nylon sizing machines, various types of package winders, and warping equipment. C—**3A.**

Automatic Pirn Winder. Kovo Co. (Prague). *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1658. A brief illustrated account is given of a new high-speed automatic pirn-winder which is made in Czechoslovakia. Known as the "Zet", it is suitable for spun rayon, cotton, wool, flax, hemp, and jute yarns, and is built in units of ten spindles. C—**3A.**

Automatic Weft-winding Machine: Calculation of Production Capacity. ("Grundlage zur Leistungsvorgabe beim Mehrspindel-Schussspulautomaten.") E. Booten. *Melliand Textilber.*, 1950, **31**, No. 5, 318-320. The factors affecting stoppages on an automatic weft-winding machine, for example, yarn quality, change of supply packages, and thread-breakage, are considered in computing the possible output. Practical data obtained with a Hacoba machine are used to illustrate the procedure. C—**3A.**

"Cascade Minor" Warping Machine. F. N. F. Ltd. *Text. Rec.*, 1950, **68**, December, 96; *Brit. Rayon & Silk J.*, 1950, **27**, December, 73-74. Some features of the new "Cascade Minor" warping machine are described. C—**3A.**

Eliminating Static in Textile Processes. *Text. Mfr.* 1950, **76**, December, 607. The "Simco" eliminator described consists of a compact power unit fed from the a.c. supply, conveying high voltage current, with low amperage, to bars permanently fixed on machines within ½-in. of the material passing by them. Installation requires only fixing of the bar clamps to the machine, attaching the power unit to a convenient wall or post, and earthing both parts of the apparatus. Arrangements can be made for the equipment to be switched on and off with the machine on which it is used. C—**3A.**

Loom-Bobbin Cleaning and Polishing Machine. J. M. Nash Company (U.S.A.). *Text. Rec.*, 1950, **68**, December, 98, 100. An illustrated description is given of the "Nash-79" automatic weft-bobbin cleaner and polisher. The machine can deal with 20 to 40 units per minute. C—**3A.**

Magazine Creel for Woollen and Worsted Yarn. E. J. McBride Co. *Rayon Synth. Text.*, 1950, **31**, No. 12, 90. The new McBride SRM magazine creel is said to permit the full run without the necessity of end tying, whilst speeds from 200 to 400 yards per minute are regularly obtained. A complete change of the cheeses on the creel is possible while the preceding cheeses are being run. Improved electro-magnetic stop motions give faster action than on the creel announced previously, and these require no adjustment. Ballooning space can be varied depending on the type of yarn to be run. W—**3A.**

(B)—SIZING

Tape Sizing: "Shirley" Accelerated Drying Device. Anon. *Text. Wkly*, 1950, **46**, No. 1188, 1690. A brief description is given of a drying system for tape sizing machines developed at the Shirley Institute. C—**3B.**

Rayon Warp Sizing. F. G. La Piana. *Text. Mfr*, 1950, **76**, December, 580-582. Much work has still to be done on the proper sizing of rayon and synthetic continuous filament and spun yarns. Sizing materials are considered in two groups. One group is of viscosity relatively low at the temperature of application and concentration necessary for good weaving, and these materials are suitable for sizing continuous filament, but not spun yarns. These sizes are easily removed by treatwith hot water and soap. The other group comprises materials with much more

body and viscosity at temperatures and concentrations suitable for weaving, and these are recommended for spun yarns. C—3B.

Viscosity in Warp Sizing. Anon. *British Rayon & Silk J.*, 1950, **27**, December, 61-62. The influence of viscosity on the success of sizing, and methods and equipment for the control of viscosity, are discussed. Photographs and diagrams are given of an American viscometer widely used for textiles purposes. C—3B.

Warping and Sizing of Coloured Rayon. ("Schären und Schlichten farbiger Kunstseideketten.") Joh. A. Schulze. *Kunstseide u. Zellwolle*, 1950, **28**, No. 4, 134-135, 137-138. Details are given of the procedure to be adopted when preparing dyed rayon warps for sizing. C—3B.

(C)—WEAVING

"Argus" Warp Stop Motion. Argus Textile Accessories (Lancashire) Ltd. *Text. Rec.*, 1950, **68**, November, 134; *Brit. Rayon & Silk J.*, 1950, **27**, December, 75-76. A new automatic mechanical warp stop motion is described. C—3C.

Cotton Weaving Productivity. Anon. *Text. Wkly*, 1951, **47**, No. 1190, 30, 32, 34; *Text. Merc.*, 1951, **124**, No. 3222, 31-33, 35. An account is given of a meeting between the British Association of Textile Works Managers and members of the Anglo-American cotton-weaving productivity team. Discussions comparing American and British weaving practices are reported. C—3C.

Electronic Eye Weft Control. ("Un detecteur de trame électronique pour métier pick-pick.") M. Marcel. *L'industrie text.*, 1950, **67**, March, 116-117. An electronic device is described whereby the loom is stopped when the weft package is nearly empty. C—3C.

Endless Belt: Weaving of Invisible Junction. ("Le tissage spécial des bandes sans fin.") R. Charlet. *L'industrie text.*, 1950, **67**, March, 113-114. A method of effecting an invisible junction in an endless belt is described. C—3C.

Fayolle Circular Loom: Adaptation for Coarse Fibre Weaving. Anon. *Text. Wkly*, 1951, **47**, No. 1190, 22, 24. A brief description is given of the Fayolle circular loom, and it is reported that it has been adapted to weave coarse fibres such as jute. C—3C.

Joseph Marie Jacquard: His Life and Work. ("Les grands noms du textile: Joseph Marie Jacquard.") Anon. *L'industrie text.*, 1950, **67**, March, 127-128. C—3C.

Let-off Motion for Top Warp Beam. Anon. *Text. World*, 1950, **100**, November, 194. The construction of a let-off motion for the top warp beam (used for example in the production of terry towelling) is described. C—3C.

New Hand Loom. Czechoslovak Metal and Engineering Works. *Text. Mfr*, 1950, **76**, November, 542. An illustrated description of a new metal framed hand loom, known as the Antl loom, is given. C—3C.

Nylon Fabrics: Some Weaving Hints. H. E. Wenrich. *Rayon Synth Text.*, 1950, **31**, No. 11, 63-64. Some hints are given on the production of nylon fabrics. These deal with choice of nylon crêpe yarns of convenient twist, the lining of shuttles for nylon crêpe weft with fur, loom setting for nylon weaving, and the weaving of monofilament and spun nylon yarns. C—3C.

Pleated and Rippled Cloth: Weaving. ("Gefältelte Gewebe.") O. Franzen. *Textil-Praxis*, 1950, **5**, No. 3, 163-165. Pleats across the whole width of the material, or folds distributed irregularly over part of the width can be obtained by the use of two warps. These can be woven together in the normal manner, or one can be made to "float", whilst the other is woven for a short length, so that on resumption of normal weaving, the extra length of the top warp is taken up by folding or pleating. C—3C.

Productivity in Weaving: American Practices. H. K. Cockcroft. *Text. Wkly*, 1950, **46**, No. 1189, 1736, 1738. A summary is given of an address on the practices employed in American mills to achieve high productivity in weaving. C—3C.

Ruti Cross-Border Dobby: Adjustment. W. Middlebrook. *Text. Mfr*, 1950, **76**, November, 537-539. The construction and setting of the Ruti cross-border dobby, and the timing of the paper pattern cylinders are described. C—3C.

Slow-motion Reversal of Loom Operation. ("La marche arrière à vitesse lente du métier à tisser par commande spéciale du moteur.") C. Marchal. *L'industrie text.*, 1950, **67**, March, 114-115. An electrical circuit is described whereby the power-unit of the loom may be made to operate slowly, whilst the loom is being operated in reverse for the purpose of correcting a fault in the weaving. C—3C.

Uncut Moquette Fabrics: Construction and Manufacture. J. Cowburn. *Text. Mfr*, 1950, **76**, November, 545-548. Practical details are given of the weaving of uncut moquette fabrics, including the preparation and dyeing of the yarn. (See also *J. Textile Institute*, 1951, **42**, A155.) C—3C.

Warp Let-off Motion: Repair of Broken Gears. Anon. *Text. World*, 1950, **100**, November, 194. A hint is given for temporarily repairing broken teeth on the flange gear of a gear warp let-off motion. C—3C.

Weft-control by Synchronised Weft Stop-motion. ("Le contrôle permanent de la duite par action synchronisée du casse-trame.") A. Delacroix. *L'industrie text.*, 1950, **67**, March, 111-112. A description is given of a synchronised weft stop-motion in which wear and tear on the moving parts is reduced to a minimum. C—3C.

Advantages of Individual Drives for Looms. ("Der Webstuhlantried.") W. Hitzler. *Text.-Praxis*, 1950, **5**, No. 4, 231-235. A general survey of group-driving of looms is made, and it is shown that this system compares unfavourably with the unit drive system in several respects, for example, efficiency, cleanliness, safety, and lighting. Different types of unit drives are then discussed. Belt drives have the advantage of lesser difficulty in alignment, and certainly present fewer obstacles in conversion from a group-drive system. Gear-drives, however, ensure a much steadier and slipless drive. Choice between the two methods is also affected by the type of loom involved and the quality of weaving required. The several advantages of unit-drive systems over group-drives are then summarised. C—3C.

A New Gear-and-Clutch Drive for Looms. ("Neuartige Webstuhlantrieb mit Bremskupplung.") Heinrich Högel. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 20-21. A new type of geared drive for looms is described in detail. It incorporates a clutch/brake device, so that, on disengaging the clutch drive, instantaneous braking action takes place. An account is given of practical experience of the drive. C—3C.

Automatic-Loom Efficiency and the Calculation of Piece-rates. ("Die Nutzleistung der mechanischen Webstühle und die Ermittlung der Akkordweblöhne in Verbindung mit Prämienzahlungen.") Ernst Möller. *Kunstseide u. Zellwolle*, 1950, **28**, No. 5, 155-160. A procedure for determining the efficiency of an automatic loom is detailed, account being taken of the quality of material being used. From the results of this method, a method for assessing equitable piece-rates over and above a given basic rate is determined. C—3C.

Cam Dobbies: Hattersley and Northrop. W. Middlebrook. *Text. Mfr*, 1950, **76**, December, 577-579. The Hattersley cam-driven model with pick-finding attachment is an inclined knife or V-dobby, and accessibility is one of the many features of the Northrop cam dobby. A detailed description and appraisal of the two systems are given, with photographs and diagrams. C—3C.

Celanese Yarns: Weaving Hints. W. H. Levers. *Text. Wkly*, 1951, **47**, No. 1192, 164, 166, 168, 170. Some practical information is given on the weaving of "Celanese" cellulose acetate rayon yarns. C—3C.

Drop-wires for Warp Stop-motion. ("Lamellen für Kettfadenwächter.") Swiss Society of Machine Manufacturers. *Textil-Rdsch.*, 1950, **5**, No. 9, 367. Swiss standard dimensions for warp stop-motion drop-wires are presented. C—3C.

German Loom Construction: New Features. ("Neuerungen des deutschen Webstuhlbaues.") H. Maier. *Text.-Praxis*, 1950, **5**, No. 5, 283-288; *Text-Praxis*, (*Eng./Span. Ed'n.*), 1950, 15. Several types of modern German looms are described, particular attention being paid to structural innovations, new mechanisms, *etc.* C—3C.

Improvements in Loom Construction Due to Increased Use of Ball-races. ("Fortschritte in Webstuhlbau durch erhöhten Einsatz von Kugellagern.") Wilhelm Busch. *Kunstseide u. Zellwolle*, 1950, **28**, No. 4, 124, 126-127. It is

pointed out that greater advantage of recent development in the automatic high-speed loom can be, and has been, secured by the use of ball-races at all points where there is movement between parts of the machine, for example, at joints, shafts, *etc.* Even where the movement is relatively slow or restricted the replacement of friction bearings, sleeves, and so on, is recommended. C—3C.

Loom Maintenance: Reduction in Wear and Tear of Moving Parts. ("Einschränkung in Verbrauch von Bedarfsartikeln.") R. Hünlich. *Kunstseide u. Zellwolle*, 1950, **28**, No. 5, 170-172. Excessive wear and tear on various parts of a loom is occasioned by maladjustment of timing, and badly fitting or unsuitable components. For example, shuttles fitting too tightly in a shuttle-box exert excessive reaction on the picking mechanism, thereby giving rise to broken gear-wheels; a too heavy shuttle has a similar effect. Several other examples of needless wear and breakages are described. C—3C.

New Chiffon-Velvet Loom. Wilson and Longbottom Ltd. *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1660. Brief details are given of a new face-to-face chiffon-velvet loom. A photograph of the machine is shown. C—3C.

New Crêpe Loom. Harling and Todd Ltd. *Brit. Rayon & Silk J.*, 1950, **27**, December, 71-72; *Text. Rec.*, 1951, **68**, January, 106-107. A new British 2X1 box crêpe-loom is described. Some photographs are shown. C—3C.

Productivity in U.S. Rayon Weaving. H. Siddle. *Text. Mfr*, 1950, **76**, December, 616-617. The reasons for the higher productivity per man-hour in the American rayon weaving industry are discussed. It is concluded that standardisation of machinery contributed to this high productivity, but that the main reason for it was the care and skill put into yarn preparation, with the aim of eliminating loom stoppages. It is possible to keep a loom running for a complete week because of this skilful yarn preparation. As a result, the standard of production and the quality of fabric produced is very high. C—3C.

Reeds and their Manufacture. T. H. Spencer. *Brit. Rayon & Silk J.*, 1950, **27**, November, 67. A lecture to the Coventry Textile Society on the manufacture and qualities of reeds of various types, followed by a discussion, is reported. C—3C.

Ribbon Looms: New Types. ("Neuartige Bandwebstühle.") August Heidermann. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 23-24. New types of Swiss and German ribbon looms, including standard narrow-width and shuttleless looms, are described. The Saurer range of single-ribbon machines is discussed in some detail. C—3C.

Systems of Looming. W. C. Hargreaves. *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1678. A summarised report is given of a paper presented at the Textile Institute's conference* on "Yarn Preparation" held in Burnley during October, 1950. (**J. Textile Institute*, 1951, **42**, A140.) C—3C.

The Shuttle-box Swell. ("Die Webstuhl-Schützenkastenzunge.") E. Ullrich. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 21-22. The advantages of using a double-swell shuttle-box, include greater accuracy of shuttle position in relation to the picking mechanism, less frequent adjustment of the stroke, compensation for wear of shuttle, and so on. Several different types of double-swell shuttle-box are described. C—3C.

Wages Based on Productivity Statistics. ("Lohnrechnung und Leistungsstatistik.") F. Herrmann. *Text.-Praxis*, 1950, **5**, No. 5, 289-290. Methods of calculating an operative's wages, based on the number of picks registered on each loom, are described. C—3C.

Warp Stop-motion Serrated Bars. ("Lamellenschienen für mechanische Kettfadenwächter.") Swiss Society of Machine Manufacturers. *Text.-Rdsch.*, 1950, **5**, No. 9, 368. Standard dimensions are given for the serrated actuating bars of the warp stop-motion mechanism. C—3C.

Weaving Efficiency: Improvement. Anon. *Text. Rec.*, 1950, **68**, December, 79-80. It is pointed out that proper maintenance of machinery is essential for maximum output and the production of fault-free cloth. An outline is given of a suggested maintenance procedure and system of inspection. C—3C.

Weaving Mill: Organisation and Control of Departments. ("Organisation des Tissages.") A. Lambrette. *Rev. Text.*, 1950, **48**, No. 2, 11-17 (4 pp.); No. 3,

47-53 (4 pp.). The article deals with organisation and control within a weaving mill, and points out the changes in detail necessitated by increasing size of mill, the largest concerns containing several more or less autonomous departments. The larger the concern, the more important it is to ensure adequate co-ordination of the departments. The arrangement of groups of looms, the causes of production fluctuations, and the use of production diagrams, particularly for assessing the running costs of each loom, are discussed. C—**3C.**

Weaving of Metal Wire in the Vosges. ("Le Tissage du fil métallique.") A. Helle-Staux. *Rev. Text.*, 1950, 48, No. 3, 60-61. This is a brief history of the metal wire weaving industry in the Vosges. Illustrations indicating the fineness and evenness of the products are given. C—**3C.**

Carpets. *Platt's Bull*, 1951, 7, 135-143. See Section 2A W—**3C.**

The Measurement and Control of Tension in Weaving. D. C. Snowden. *Text. Merc.*, 1951, 124, 287-8. A lecture concerned with warp tensions. The lecturer considers that the most serious cause of uneven warp tension is ridginess on the beam. The use of the cathode-ray oscillograph is mentioned. The W.I.R.A. roller let-off motion is described and discussed. W—**3C.**

The Manufacture of Uncut Moquettes. J. Cowburn. *Text. Mfr*, 1951, 77, 62-65. The production of fabrics having two different heights of pile is described. A separating warp is used. For a small loop, the pile wire passes under this warp, the pile ends passing over the wire in the usual way. For a long loop, one wire passes under the separating warp, then one above it, the pile end passing over the two wires. The separating warp is waste and is reeled at the front of the loom when wires are withdrawn. Details are given of modifications which are necessary in order to achieve these effects. Several diagrams are included. W—**3C.**

Looms: Modern Swiss Woollen—. J. H. Crowther. *Canad. Text. J.*, 1950, 67, No. 25, 50-54. The construction and working of the two main types of Saurer loom are described. Particulars of labour requirements are given. W—**3C.**

(D)—KNITTING

Improved Wirth Flat Knitting Machine. ("Die neue Grossproduktions-Schnellwirkmaschine, Modell F50-Wirth.") H. Mundel. *Melliand Textilber.*, 1950, 31, No. 4, 250. A new flat knitting machine by Wirth, Model F50, has been designed to compete with English high-speed machines. The mechanisms by which this has been achieved are described. C—**3D.**

Knitting: Effects of Faulty Cone Winding. B. Etherington. *Text. Whly*, 1951, 47, No. 1191, 94, 96, 98. After giving a brief account of the evolution of the knitting machine and describing the principles of knitting, the author enumerates the attributes of good hosiery yarn and indicates some of the faults caused by badly wound cones of yarn. C—**3D.**

Modified Kidde-Aveco Tricot Knitting Machine. Kidde Manufacturing Co. *Text. World*, 1950, 100, November, 184. A brief illustrated description is given of an improved Kidde-Aveco two-bar, 168-inch tricot knitting machine. The improvements include continuous let-off and take-up motions, "inching" or "jogging" control, and variable-speed belt drive. C—**3D.**

Circular-Knit Fashioned Hose. Anon. *Brit. Rayon & Silk J.*, 1950, 27, November, 62-64. A detailed technical description is given with photographs and a diagram, of the mechanism of the Reymes-Cole patent which relates to methods of preserving a uniform knitted structure, irrespective of whether all needles or only alternate needles are in action. A stocking can be produced with a much better fit than the normal circular stocking, more quickly and at a lower price. Notes are included on an adaption, under licence, of a Scott and Williams type of circular machine to this principle, by B. Toone (Nottingham) Ltd. The article concludes with a note by Mr. Kenneth Meakin, of Montfort (Knitting Mills) Ltd., on marketing prospects for the new product. C—**3D.**

Jacquard Knitwear: Manufacture—Part I. J. B. Lancashire. *Text. Rec.*, 1950, 68, December, 88-90. The constructions of some jacquard knitted fabrics are described and illustrated. These include accordion fabrics, rib jacquard fabrics, and jacquard interlock fabrics. C—**3D.**

Knitting Machinery: Selection of Yarn of Suitable Count. ("Maschinenfeinheit und Garnnummer bei Rundstrick- und Rundwirkmaschinen.") G. Walter.

Text.-Praxis, 1950, **5**, No. 5, 299; No. 6, 343. The suitability of a given yarn for a given circular knitting or hosiery machine depends upon the fineness of that machine, that is, the number of needles per unit length. Mathematical relationships and graphs are given which assist in the co-ordination of these variables. C—**3D.**

Mechanical Handling in an American Mill. F. A. Westbrook. *Text. Mfr*, 1950, **76**, December, 584-585. A new low-ceilinged building has recently been put up by an American manufacturer of fine warp knitted fabrics, in which up-to-date knitting machinery and a comprehensive overhead system of mechanical handling has been installed. The description of this equipment is illustrated by six photographs. C—**3D.**

Plain-Knitting Machines: Basic Loop Structures. ("Grundmaschenbindungen.") K. A. Henning. *Melliand Textilber.*, 1950, **31**, No. 6, 400-403. The basic loops obtained on plain-knitting machines are shown in detail and the derivation of various designs indicated. C—**3D.**

Warp Knitting Technology. Part IX. D. F. Paling. *Brit. Rayon & Silk J.*, 1950, **27**, November, 72-73. Methods are described of using partially threaded guide bars to produce a range of fabrics containing a cord effect in the warp direction, or with semi-open designs and raised effects. Photographs and point paper drafts illustrate several patterns. (See *J. Textile Institute*, 1951, **42**, A87.) C—**3D.**

Warp Knitting Technology. Part X. D. F. Paling. *Brit. Rayon & Silk J.*, 1950, **27**, December, 55-57. This article deals with "laid-in" fabrics, in which the front guide-bar produces the ground structure, and the laying-in threads are carried in guide bars placed behind the front guide-bar. Patterns are illustrated with diagrams and point paper designs. C—**3D.**

Weft Knitting. Part III. Looping Elements (continued). S. B. Bradley. *Brit. Rayon & Silk J.*, 1950, **27**, November, pp. 69-72. A detailed description of the function and constituent parts of the various types of loop-forming or web-holding sinkers used in weft knitting, with diagrams and photographs. (See also *J. Textile Institute*, 1951, **42**, A88 and A154.) C—**3D.**

(E)—LACEMAKING AND EMBROIDERING

Embroidery Machine: Development. ("Die Stickmaschine.") E. Verse. *Melliand Textilber.*, 1950, **31**, No. 4, 251-254; No. 5, 327-328. The development of the modern shuttle-type embroidery machine from the first hand-operated machine, which followed closely the purely manual methods, is described with the aid of numerous diagrams. C—**3E.**

(F)—SUBSEQUENT PROCESSES

Hooped Foundations for Gowns: Design. G. W. H. Stevens. *J. Textile Institute*, 1950, **41**, No. 10, P719-724. The hooped foundation of a gown is analysed as a stressed structure and the results of this treatment are applied to the practical design of such foundations. C—**3F.**

(G)—FABRICS

Alginate Fibres: Use in Textiles. ("La torsion floche des filés temporairement soutenue permet la création de tissus nouveaux.") A. Levesque. *L'industrie text.*, 1950, **67**, April, 165-170. Applications of soluble alginate fibres are described; examples are given and illustrations show the various effects obtainable. C—**3G.**

Bouclé Fabrics: Construction. ("Studies in Textile Design," Part III.) Anon. *Text. Rec.*, 1950, **68**, November, 97-98. The construction of some novelty bouclé fabrics is described. Weaving designs and illustrations of four fabrics are given. C—**3G.**

Warp Knitted Fabrics: Basis of Pattern. C. H. Edwards. *Text. Rec.*, 1950, **68**, November, 101-102. The construction of some simple striped (straight and zig-zag) and diamond patterned warp knitted fabrics is discussed. (For the previous article see *J. Textile Institute*, 1951, **42**, A155.) C—**3G.**

Woven Rayon Utility Fabrics: Guide to New Board of Trade Order. Anon. *Text. Whly*, 1951, **47**, No. 1191, 90, 92. Some information is given as a guide to the Board of Trade's "Utility Woven (Filament) Rayon Cloth Order, 1950." C—**3G.**

Circular Hosiery Knitting-machine Patterns. ("Theorie der Musterberechnung auf Rundwirk- und Rundstrickmaschinen.") Lorenz Friedl. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 29-32. The method for working out the design for a raised pattern on a circular jacquard knitting machine is demonstrated by reference to a particular example; the pitch equation is also derived. The weekly productivity of a machine of this type is determined. (cf. Abstract C.1951/485.) C—**3G.**

Coventry Ribbons. C. Mayell. *Rayoneer*, 1950, December, 340-342. A popular account is given of the history of ribbon weaving in Coventry, with a description of some unusual examples of this art. C—**3G.**

Elastic Weaves. ("Bindungen für elastische Gewebe.") Herbert Petzold. *Kunstseide u. Zellwolle*, 1950, **28**, No. 5, 163-165. The production of elastic fabrics, with elastic properties in a warpwise or weftwise direction, is described, and illustrated by several point-paper patterns. C—**3G.**

Furnishing Fabrics: Design and Production—Part 2. A. T. C. Robinson. *Silk & Rayon Rec.*, 1950, **24**, No. 11, 1526, 1528, 1530. Instructions and diagrams are given for the weaving of a three weft brocade, a rayon-cotton tapestry design, and a fabric of quilted style. (Part I, see *J. Textile Institute*, 1951, **42**, A89.) C—**3G.**

Metallic Fabrics: Applications and Manufacture. ("Quelques suggestions à propos de la fabrication des tissus métalliques.") —. Godol. *Rev. Text.*, 1950, **48**, No. 3, 55, 57, 59. The possible applications of fine-woven metallic-wire fabrics cover a wide field, both for æsthetic purposes and in industry. Æsthetic uses include curtaining, screens, and the like, and in this connection it is pointed out that not only can metal fabrics be fireproof, but also they actually prevent flame propagation; other features include transparency without glare, good permeability to air, protection against flying insects, and so on. Numerous industrial applications are already well known and include wires for the paper manufacturing trade, filters for various purposes, spark-arresters, and the like. Brief descriptions are given of the looms employed. C—**3G.**

Silk-Screen Printing Methods. Anon. *Times Rev. Ind.*, 1951, January, 25. Bolting silk is the most satisfactory material for the majority of screens. It is woven in the gum to give high durability and resilience, and can be supplied in four qualities, according to the number of thrown threads, and in several degrees of woven fineness for each quality. Mention is made of two new machines. C—**3G.**

Six-shaft Sand-Crêpe Weave and Possible Variations. ("Die sechschäftige Sandkreppbindung und ihre Variationsmöglichkeiten.") O. Ehrhardt. *Melliand Textilber.*, 1950, **31**, No. 6, 397-400. A number of point-paper diagrams are reproduced to illustrate the possibility of making use of the six-shaft sand crêpe weave in fabrics of complex composition, in order to produce cloth in relief. Various types of fabric which can be obtained by suitable modification are shown. C—**3G.**

Smallwares and Narrow Fabrics: Historical Sketch. Thomas French and Sons Ltd. and Margaret Bunn. *J. Textile Institute*, 1950, **41**, No. 11, pp. P751-799. A historical survey is made of the English smallwares and narrow fabrics industry from its earliest recorded times to 1944. C—**3G.**

Spot Effects in Single Fabric Structures. D. C. Snowden. *Brit. Rayon & Silk J.*, 1950, **27**, November, 65-67. The article describes production of spot effects by (1) using spot or knop yarns in warp and/or weft with a simple weave, (2) small repeat colour patterns in warp and/or weft with various weaves (colour and weave spot effects), and (3) increasing at intervals the floats of warp and/or weft threads to give weave spots. Methods (2) and (3) are illustrated by a number of diagrams. (See *J. Textile Institute*, 1951, **42**, A89.) C—**3G.**

Tie Fabrics: Design and Production—Part 3. A. T. C. Robinson. *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1648-1658 (4 pp.). Details and diagrams are given for the construction of some Jacquard tie fabrics of both the solid warp and end-and-end figuring styles. (Part I, see *J. Textile Institute*, 1951, **42**, A89.) C—**3G.**

Warp-Knitted Fabrics: Basis of Pattern. C. H. Edwards. *Text. Rec.*, 1950, **68**, December, 91-93. In this, the third of a series of articles, the author deals with those warp knitted fabrics in which design or pattern depends on the exploitation of mechanical variables and in which yarn colour or lustre is of

secondary importance. Of this group the one-, two-, and three-bar fabrics are considered, and some examples are shown. C—3G.

Tartan Rugs and Blankets. J. Gerstel. *Wool Rec.*, 1951, **79**, 117-121, 201-203, 289, 293. The production of tartan rugs and blankets is described. Special reference is made to yarn preparation, weaving of rugs, calculation of warp weights and weft weights, the making of fringe, and the finishing processes. A table gives milling data for tartan blankets. W—3G.

PATENT

Porous Fibrous Products. A. Taladay. B.P.646,422 of 22/11/1950. A carded web of unfelted wool or other fibre with similar characteristics is sprayed with an aqueous dispersion of an elastomer, *e.g.* rubber latex, and dried. The web is then dipped in a dilute latex or like dispersion and again dried. It is then plied to any desired thickness, a latex or other cement being used for adhesion of the laminations to one another, and is finally vulcanised. The resulting stereoreticulate structure provides a light-weight cushioning material especially suitable for upholstery and similar purposes. W.

4—CHEMICAL AND FINISHING PROCESSES

(A)—PREPARATORY PROCESSES

Pulverising Textile Fibres. ("La pulverisation des fibres et le 'suedage'.") P. Vuillot. *L'industrie text.*, 1950, **67**, March, 125-126. In order to obtain a microscopically fine division of textile fibres (including animal, vegetable, or synthetic material), controlled oxidation by chemical or physico-chemical means is followed by grinding. The resulting particles are rod-like in form and finer than the smallest particles of talc or kaolin. The powder can be used for obtaining a suede finish on a base-cloth. C—4A.

Heavy-Duty Surface-Batching Machine. G. Durrant and Sons Ltd., *Text. Wkly*, 1951, **47**, No. 1193, 248. A new heavy-duty surface-batching machine is announced. This machine, which features constant speed and tension, can produce rolls of cloth up to 4 feet in diameter. C—4A.

Modern Textile-Auxiliaries. A. J. Hall. *Silk & Rayon Rec.*, 1950, **24**, No. 11, 1502, 1505, 1507, 1509; No. 12, 1640, 1644, 1646; 1951, **25**, No. 1, 94, 98, 100. The list of textile auxiliaries is continued (bringing the number described so far to 270). The name of the manufacturer and a brief indication of the properties of each product are given. (For previous references see *J. Textile Institute*, 1951, **42**, A91.) C—4A.

(B)—BOILING, SCOURING, DEGUMMING AND WASHING

Non-ionic Capillary-active Substances. ("Über nichtionogene kapillaraktive Stoffe.") L. Orthner. *Melliand Textilber.*, 1950, **31**, No. 4, 263-266. The structure and properties of non-ionic detergents are described. The more recent developments in the theory of the mechanism of their activity are presented. C—4B.

Nylon Processing: Parts 7-9. British Nylon Spinners Ltd. *Text. Merc.*, 1951, **124**, No. 3223, 77-79; No. 3224, 108, 110; No. 3225, 157-158. These further extracts from the Nylon Technical Service Manual deal with (*a*) scouring, (*b*) the principles of the setting of nylon fabrics, and (*c*) steam and dry setting methods. (For previous parts see *J. Textile Institute*, 1951, **42**, A151.) C—4B.

Textile Auxiliaries: Standardised Evaluation Methods. ("Anregungen zur Normung von Eigenschaften der Textilhilfsmittel.") H. Seiche. *Textil-Praxis*, 1950, **5**, No. 3, 186-188. A plea is made for the standardisation of methods for evaluating the efficiency of textile auxiliaries. The author puts forward suggestions for tests such as: wetting efficiency, dispersing power, scouring efficiency and felting power. C—4B.

Wool Scouring in New Zealand. S. Smith. *Wool*, 1950-51, **1**, No. 3, 59, 61. The evolution and present position of the New Zealand wool scouring industry are described. Bradford, New Zealand, and Continental practices are compared with regard to qualities of wool and their relation to the scouring trade. Mention is made of the effect of long storage on wool for scouring. The establishment of a wool conditioning house in New Zealand to safeguard the purchaser of scoured wool against inefficient work is recommended. W—4B.

Wool Scouring and Oiling: Recent Developments in Technique. C. A. Morris. *Text. Rec.*, 1950, **68**, No. 813, 85-87. Inadequate or uneven removal of oils and excessive or unevenly distributed alkali are sources of trouble to the dyer, and the author surveys the progress made in wool scouring and oiling technique in order to eliminate or minimise these faults. The use of detergent builders, addition of common salt, soda ash, *etc.*, are mentioned. Results of experiments designed to compare alkaline and neutral scouring are included. Mention is also made of the value of neutral scouring for mohair, where handle and lustre are important, and of the use of sodium bicarbonate in the first scouring bowl. The addition of oleyl alcohol and mono- or di-glycerides is recommended for removing mineral oils. Good results are obtained by using an emulsion of one part of self-emulsifiable mineral oil in one part of water. W—**4B.**

(D)—MILLING

Milled Fabrics: Damaging Effects in Finishing. ("Schädigende Appreturein-flüsse bei Walktuchen.") P. Rangnow. *Text.-Praxis*, 1950, **5**, 790-791. Reasons are discussed for loss in tensile strength of fabrics, especially uniform fabrics, due to milling, carbonising and raising. Increasing the number of warp and weft threads leads to increased thread breakage, and therefore to increased costs in weaving; milling takes 5-6 hours, instead of 4 hours, and cover and handle are less satisfactory with a crowded setting. W—**4D.**

Milling: Problems. A. E. Newstead. *Text. Merc.*, 1951, **124**, 288-290. Colour bleeding, streakiness, and inking prior to milling are among the problems discussed. W—**4D.**

(E)—DRYING AND CONDITIONING

Hosiery Drying Machine. Smith, Drum and Co. *Text. World*, 1950, **100**, November, 175. A new hosiery drying machine which operates at four to five times the usual rate and eliminates final boarding is announced. C—**4E.**

Improving Rayon Properties by Accelerated Drying of Cake. ("Amélioration des qualités du fil de rayonne par séchage accéléré du gâteau.") G. Lallier. *L'industrie text.*, 1950, **67**, March, 109-110. On drying rayon filament it contracts both longitudinally and transversely, with the result that when cakes are treated in a hot-air oven, uneven tension and compression effects are set up owing to the outer layer drying first. Amongst other things the lustre of the filament will vary. These undesirable conditions may be avoided by the employment of high-frequency heating in a partial vacuum whereby rapid and even drying throughout the cake is obtained. C—**4E.**

Infra-red Drying in the Textile Industry. ("Über die Infrarot-Trocknung für die Anwendung in der Textilindustrie.") Josef Schneider. *Melliand Textilber.*, 1950, **31**, No. 4, 284-6. Data relating to the efficiency of infra-red drying at various stages of textile fibre processing, for example, as loose fibre, yarn, and woven fabric, are presented. The nature of the material and the colour have a considerable effect on this efficiency. Some details are given concerning the general construction of infra-red dryers as applied to textiles, and of the cost of power as compared with superheated steam. C—**4E.**

The Centrifuge. Charles M. Ambler. *Chem. Engng Prog.*, 1950, **46**, No. 11, 549-555. Some applications of the centrifuge in industry are discussed. Various types of centrifuges are described and illustrated with reference to the machines made by the Sharples Corporation. C—**4E.**

(G)—BLEACHING

Caustic Soda and Hypochlorite Production: Electrolytic Plant. Amroc, Inc. *Text. Rec.*, 1950, **68**, November, 133. A small-scale electrolytic plant for the production of caustic soda and sodium hypochlorite from common salt is announced. C—**4G.**

Fluorescent Bleaching Agents: The "Blankophores". ("Über Blankophore als optische Aufhellungsmittel in der Textilindustrie.") E. Köster. *Text.-Praxis*, 1950, **5**, No. 5, 304-305; *Text.-Praxis, (Eng./Span. Ed'n)*, 1950, **40**. After a brief description of the principle underlying the phenomenon of increased brightness exhibited by fluorescent bleaching agents, the paper defines the conditions under which these dyestuffs can be applied, and describes their general properties. C—**4G.**

Industrial Pumping Problems. Irving Taylor. *Chem. Engng. Progress*, 1950, **46**, No. 12, 637-642. The correct choice of pump for a given purpose is briefly considered, and then the suction problem which arises in the pumping of boiling and near-boiling liquids (or liquids which readily evolve gas or vapour) is discussed at length. Several solutions to the problem are suggested with illustrations of the arrangements required. C—4G.

Textile Bleaching: Literature Survey: Part II. J. F. Hagen. *Amer. Dyest. Rep.*, 1950, **39**, No. 23, pp. P782-786; No. 24, pp. P820-830. The second part of this comprehensive survey of the literature on textile bleaching (from 1900 to the present time) covers chemicals; processes and apparatus; how material is affected by bleaching; chlorine; sodium chlorite; nascent hydrogen; ozonized air; chloramine; and the Mohr process. (For Part I, see *J. Textile Institute*, 1951, **42**, A161.) C—4G.

The Use of Sodium Chlorite in the Textile Industry. ("Die Anwendung der Chlorits in der Textilindustrie.") H. J. Meybeck. *Text.-Rdsch.*, 1950, **5**, No. 9, 349-362. In discussing the chemistry of sodium chlorite the author points out the greater stability of the anhydrous form compared with that of the trihydrate. The effect of *pH* on the stability of aqueous solutions of the salt is examined, and its reactions with hypochlorite, chlorine, hydrogen peroxide, and aldehydes, are described. The resistance to chlorite solutions of metals and plastic materials is discussed at some length and data presented in tabular form. The various applications of sodium chlorite in the textile industry are described under the following headings: bleaching of cellulose fibres (*a*) cotton ("acid-chlorite" and "chlorite-hypochlorite" continuous bleaching processes), (*b*) viscose rayon bleaching, (*c*) flax, hemp and jute bleaching, (*d*) acetate rayon bleaching, and (*e*) superpolyamide fibre bleaching. The effect of sodium hypochlorite on protein fibres is also surveyed. [46 references.] C—4G.

(I)—DYEING

Cellulose Acetate Rayon: Application of Acid Dyes. Anon. *Dyer*, 1950, **104**, Nos. 7-10, 393-399; No. 12, 567-573 (9 pp.). A review is made of methods that have been developed for the dyeing of cellulose acetate rayon and cellulose acetate rayon/wool mixtures with acid dyestuffs. Reference is made to the relevant patent literature. C—4I.

Cellulose Acetate Rayon: Dyeing. R. F. York. *Text. Rec.*, 1950, **68**, November, 100. A report is given of a lecture on the dyeing of acetate rayon with vat, acid, and direct colours. The information given includes the use of swelling agents to increase the affinity of cellulose acetate for cellulose dyes. C—4I.

Development of Dyeing Techniques. ("Entwicklung und heutiger Stand der Textilfärbereitechnik.") E. Köster. *Textil-Praxis*, 1950, **5**, No. 2, 121-123; No. 3, 181-184. A historical survey is made of the development of dyestuffs and dyeing practice, showing how modern techniques are related both to the discovery of new colouring agents and to modification in machinery design. C—4I.

Dyeing and Finishing: Developments During 1950. Anon. *Text. Wkly*, 1950, **46**, No. 1188, 1668-1674; No. 1189, 1740-1742; 1951, **47**, No. 1190, 48-54; No. 1191, 110-118; No. 1192, 172-176; No. 1193, 242-246 (21 pages). A survey is given (with relevant literature references) of developments in dyeing and finishing processes and techniques made during 1950. C—4I.

Dyeing and Finishing Machinery: Modern Developments. A. Carpenter. *Text. Rec.*, 1950, **68**, November, 127. A brief survey is made of some of the modern dyeing and finishing machinery shown at the *Textile Recorder* Knitting Machinery Exhibition. C—4I.

Intermediate Rinsing during Naphthol Dyeing. ("Das Zwischenspülverfahren in der Naphtolfärberei.") W. Giesen. *Textil-Praxis*, 1950, **5**, No. 3, 184-186. It is often found that materials dyed with naphthol colours appear to lack fastness to rubbing. This is usually due to incomplete removal of excess naphthol solution after padding. Mechanical processes such as squeezing, suction, and centrifuging, are far from efficient, and although intermediate drying would certainly cause the excess to come into intimate contact with the fibre and thus secure greater fastness, the method is only practicable in the case of piece goods. Dispersing agents and addition of common salt are frequently highly effective. However, the intermediate rinsing process (with sodium hydroxide solution) has proved the most successful. Again, the addition of common salt is desirable, the

quantity required being dependent on the substantivity of the dye. The conditions and some data are presented. C—41.

Logwood and its Applications: Part I. O. Newsome. *Dyer*, 1950, **104**, No. 13, 625-627. The history of the use of logwood in England, the development of mordanting of this dye, and the extraction of hematine crystals are briefly dealt with. Brands of hematine crystals (ranging from 15 to 100 per cent. oxidized) marketed in Britain are listed. C—41.

New Winch Dyeing Machine: Pegg Type PW. Samuel Pegg and Son. *Dyer*, 1950, **104**, Nos. 7-10, 372. A new totally enclosed winch dyeing machine is shown. C—41.

Practical Hosiery Dyeing. ("Aus der Praxis der Strumpffärberei.") H. Lint. *Melliand Textilber.*, 1950, **31**, No. 2, 115-117; No. 4, 273-278. A practical guide is offered for the handling of all types of hosiery goods in the dyehouse, some attention being paid to the nature of the textile materials used. Various types of dyeing machinery are described in detail, and dyestuffs which have been found very useful are listed. The treatment of nylon and Perlon Stockings is briefly described. C—41.

Vat Dyeing: Pigmentation Methods. T. Richardson. *Text. Rec.*, 1950, **68**, November, 106-108. The pigment padding method of applying vat dyes to piece-goods and the du Pont development of it (the pad steam process) are discussed. These methods are used to overcome faults due to the rapid dyeing and non-levelling properties of vat dyes. Advances in techniques for the vat dyeing of yarn are also considered, particularly the dyeing of viscose rayon cakes. C—41.

Vinyl Resin Fabrics: Dyeing and Finishing. ("Teinture et apprêts des tissus vinyliques.") M. Bauval. *L'industrie text.*, 1950, **67**, March, 120-125. Before dyeing and finishing, vinyl resin fabrics require to be treated for removal of lubricant and size; this is described. Methods of dyeing the fabrics with acetate, naphthol and indigosol dyes are discussed in some detail, as are methods of printing. Finishing processes include decatising, shrinking, coating, and water-proofing. C—41.

Warp Dyeing versus Pressure Beam Dyeing. S. Emmott. *Dyer*, 1950, **104**, Nos. 7-10, 371-372. Warp and pressure beam dyeing are compared and a few details of the latter process are given. (This is a summary of a paper presented at a conference on "Yarn Preparation" held in Burnley in October, 1950; see *J. Textile Institute*, 1951, **42**, A140.) C—41.

"Albigen A": A New Non-ionic Dyeing Auxiliary. ("Albigen A, ein neuer Vertveter in der Gruppe der farbstoffaffinen Textilhilfsmittel.") M. Bräuer. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 53-56. After a preliminary discussion on the mechanism of non-ionic levelling agents used in dyeing, a new product, "Albigen A" is described. This pale yellow, weakly ammoniacal liquid has a medium viscosity and is slightly cation active. Its use in stripping and levelling various dyestuffs is described. C—41.

Blended Fibres: Finishing. Anon. *Dyer*, 1951, **105**, No. 1, 45-46. It is pointed out that the dyeing and finishing processes used for fabrics made from natural fibres are often too harsh for fabrics made from natural fibres blended with rayon or synthetic fibres. C—41.

Cheese-dyed Weft Yarn for One-colour Weaves. ("Gefärbte Kreuzspulen als Schussgarn für Uniware.") Hans Ellner. *Text.-Praxis*, 1950, **5**, No. 5, 301-303. The causes of non-uniformity of shade when yarn is dyed in cheese form are usually attributable to variations in softness amongst different cheeses, variations of softness within a package, variations in sizes of cheese, differences in yarn quality on the same spool, ends being too hard, bad positioning on the spool, or lack of cross-winding. These factors are discussed individually. Other means of unevenness in dyeing arise from the type of dyeing machinery used, the material from which the tube is made, the dyestuff and/or chemicals employed, the water supply, and drying. These latter points are also considered. C—41.

Cheese-dyeing of Rayon. ("Beiträge zur Zellwoll-Kreuzspulfärberei.") Franz Zons. *Kunstseide u. Zellwolle*, 1950, **28**, No. 4, 121-124. The dyeing of rayon in cheese form has presented special difficulties in the past owing to the strong swelling effects of liquids, particularly alkaline solutions. The various methods by which improved dyeing has been obtained include not only a modified winding

technique, but also larger diameter spools, reduced liquor-circulating pressure (to avoid channelling), addition of wetting agents, and so on. Factors involved in using different types of dyestuff are discussed. C—41.

Chrome and Aluminium Mordants: Theory. ("Contribution à la théorie des mordants de chrome en général et de ceux à l'alumine dans la teinture de la laine.") Justin Mueller. *Teintex*, 1950, 15, No. 2, 57-71 (9 pages); No. 9, 411. This is a detailed treatment of the application of chrome mordants to cotton and wool, and a discussion of the underlying theory. C—41.

Colloids in Textile Processing and Colouring. Anon. *Text. Mfr*, 1950, 76, December, 612-614. The article comments on the colloidal state in general; gelatine in sizing and dyeing; colloidal properties of wool and silk as they affect processing; dispersive and protective action of colloids in vat dyeing, and colloids in the application of azoic dyes to various fibres, and in the cold dissolving of naphthols. C—41.

Copper and Iron Salts in Dyeing. ("Contribution à l'étude des mordants et sels de fer et de cuivre.") E. Justin-Müller. *Teintex*, 1950, 15, No. 9, 401, 403, 405, 407-408. The chemistry of the reactions of iron and copper salts used in such textile applications as the reduction of vat-dyes and mordanting, is discussed at some length. C—41.

***oo'*-Dihydroxyazo Dyes: Constitutional Suitability for Metachrome Dyeing.** ("Über Beziehungen zwischen Konstitution von *o,o'*-Dioxyazofarbstoffen und Eignung für das Einbadchromierungsverfahren.") G. Schetty. *Text.-Rdsch.*, 1950, 5, No. 10, 399-405. Increase in the number of hydrophilic groups in *oo'*-dihydroxyazo dyes reduces their suitability for dyeing by the metachrome process, since the affinity for wool is decreased. Both oxy- and sulpho-groups have hydrophilic characteristics, and if this activity in these groups is eliminated by chelation, good metachrome dyes can be obtained. A series of structural formulæ illustrate the discussion. A tabulated list of dyestuffs, with their structural formulæ, is given, and it indicates their suitability as metachrome dyes. C—41.

Dyeing of Hosiery and Knitted Goods. ("Probleme der Trikotfärberei.") A. Metzger. *Text.-Praxis*, 1950, 5, No. 4, 245-247. For the dyeing of knitted goods it is essential that the dyehouse should be well lighted, and that fog-formation and resultant condensation should be avoided. The use of stainless steel in the construction of the dyeing machine has become an almost essential feature if unwanted stains are to be eliminated; such staining is always a possibility where wood is used, in spite of great expenditure in labour, time, chemicals, *etc.*, employed in cleaning the vessel. Other problems discussed include water, steam-heating, faults due to handling, the dyeing process and type of dyes used, the removal of excess water and subsequent drying. C—41.

Detection of Indigosols. ("Eine Methode zur Erkennung von Indigosolen.") J. Lanczer. *Melliand Textilber.*, 1950, 31, No. 5, 360-361. In the normal transfer method for testing the presence of vat dyes (mercerised cotton is wrapped in a specimen of the test piece, and treated in a caustic soda-hydrosulphite bath of suitable composition at 65° C.), mordant and sulphur dyes capable of forming vats are not allowed for. A second test involves the addition of pyridine, and bringing the bath to the boil. Marked staining of the mercerised cotton in the second bath only, indicates the presence of indigosol dyes. C—41.

Dyeing of Mixtures Containing Acetate Rayon. ("Das Färben von Materialen, die Azetatkunstseide bzw. Azetatzellwolle als Beimischung enthalten.") K. Wojatschek. *Melliand Textilber.*, 1951, 32, No. 1, pp 61-63. The more important methods for dyeing materials containing mixtures of acetate rayon with cotton, wool, silk or nylon, are discussed. C—41.

Dyeing of Rayon with Indanthrene Dyes. ("Indanthrenfärbung auf Kunstseide.") Franz Zons. *Kunstseide u. Zellwolle*, 1950, 28, No. 5, 173-174, 176-177. A general survey of the development of the Indanthrene vat dyestuffs, is followed by a description of the conditions for dyeing viscose and cuprammonium rayon yarns in hank form, or as woven fabric, or the fibres in sliver form. The application of Anthrasol colours in also briefly discussed. C—41.

Dyeing Synthetic Fibres. ("Some Problems of Rayon Dyeing." X, XI.) A. G. Tyler. *Brit. Rayon & Silk J.*, 1950, 27, November, 68-69, December, 57-58.

Concluding his articles on rayon dyeing, the author deals with the problems of dyeing nylon and other synthetic fibres. (*J. Textile Institute*, 1951, 42, A93.) C—4I.

Fastness of Dyeings and Prints to Acid-milling. ("Bestimmung der sauren Walkechtheit von Farbungen und Drucken.") Swiss Society for Testing Technical Materials. *Text. Rdsch.*, 1950, 5, No. 9, 364. A method of test, applicable to all types of fibre and at all stages of processing, for determining acid-milling fastness is prescribed in Swiss Standard Method SVMT25–A2572. C—4I.

Fastness of Dyeings and Prints to Soda-boiling. ("Bestimmung der Sodakochechtheit von Färbungen und Drucken.") Swiss Society for Testing Technical Materials. *Text. Rdsch.*, 1950, 5, No. 9, 365. A method of test, SVMT25–A2551, is prescribed for the determination of the fastness of dyeings and printings, on natural and regenerated cellulose materials, to boiling soda solution. C—4I.

Fastness to Kier-boiling of Dyeings and Prints. ("Bestimmung der Beuchechtheit von Färbungen und Drucken.") Swiss Society for Testing Technical Materials. *Text. Rdsch.*, 1950, 5, No. 9, 366. SVMT25–A2552 (Swiss Standard Method) prescribes conditions for testing kier-boiling fastness of dyeings and prints. C—4I.

Graphical Determination of *pH* in Naphthol-Coupling Baths. ("Graphische Ermittlung der *pH*-Werte von Entwicklungsflotten.") W. Wittenberger. *Melliand Textilber.*, 1950, 31, No. 5, 359-360. The principles underlying the construction of a logarithmic graph for calculating the *pH* values in a coupling bath, are explained. The mode of use is explained by examples. The article is supplementary to that by W. Hees in *Mell. Textilber.*, 1950, 31, No. 1, 47-48 (*J. Textile Institute*, 1950, 41, A355). C—4I.

Historical Survey of the Dyeing of Blue Overall Materials. ("Das Färben der blauen Berufskleiderstoffe im Wandel der Zeit.") —. Rinneberg. *Kunstseide u. Zellwolle*, 1950, 28, No. 5, 168-170. C—4I.

Hydron Blue Dyestuffs: Application. ("Die Hydronblau-Färberei.") K. A. Rinneberg. *Text.-Praxis*, 1950, 5, No. 4, 247-251; No. 5, 309-313. Recipes are given for the vat-dyeing of cotton and rayon with Hydron Blue type dyestuffs. Practical hints are given for the manipulation of the machinery and the dyebath for the dyeing of loose cotton, slivers, cops, hanks, and fabric. The vat-acid continuous process for piece goods is also described. C—4I.

"Orema" Dyestuffs: Their Applications in the Dyeing and Printing of Fabrics. Parts I and II. ("Die Oremafarbstoffe und ihre Verwendung zum Bedrucken und Färben von Textilgeweben." I, II.) F. Enderlin and L. Schibler. *Melliand Textilber.*, 1950, 31, No. 4, 267-273; No. 5, 340-348. The difficulties associated with the pigment printing of textiles are discussed. Fastness to rubbing, and the handle of the printed material, are the two principal problems. The development of synthetic resins and emulsion-soluble thickening agents has materially eased the situation. The advantages of the oil-in-water over water-in-oil emulsions are pointed out. Printing inks, especially those containing the recently introduced "Orema" dyestuffs, have been developed by Ciba Ltd., and are based on the principle of oil-in-water emulsions. The constitution, properties, applications, and other aspects of these inks are treated in great detail. C—4I.

"Physical Condensation" (Agglomeration) of Dyestuff in a Dyed Fibre. ("Über die 'physikalische Kondensation' von Färbungen.") R. Haller. *Melliand Textilber.*, 1951, 32, No. 1, pp. 50-52. It has been observed, that, under suitable conditions, dyestuff particles homogeneously distributed within a fibre, tend to migrate through the cell walls to form agglomerates. This phenomenon occurs particularly with vegetable fibres heated in water under pressure, even to the extent of forming well-defined crystals in the lumen of the cotton fibre, the substrate being entirely cleared of such dyestuffs as vat and the insoluble azo colours. Photomicrographs illustrate the migration of indigo in cotton fibres. It is suggested that micellar structure of the cell walls may offer an explanation of their permeability to the pigments or, rather, the transmission of the pigments may be further proof of such a micellar structure. Another suggestion is that under the conditions of heat and pressure, the dyestuff may become temporarily soluble. Other observations made during an investigation of the phenomenon are described. C—4I.

Recent Developments in Dyestuffs. ("Neuere Farbstoffe.") W. Seidenfaden. *Melliand Textilber.*, 1949, **30**, No. 1, pp. 32-33; No. 2, pp. 73-75; 1950, **31**, No. 12, pp. 839-843; 1951, **32**, No. 1, pp. 57-60; No. 2, pp. 146-148. A detailed survey has been made of developments of dyestuffs during the past ten years by reference to international patent literature. The arrangement of the survey is not made on the basis of chemical structure but on the material being dyed; where a dyestuff has more than one possible application, it is included in the section in which it is likely to find greatest use. The first material to be dealt with is cellulose, and the dyestuffs given so far include azo dyes, dyes developed on the fibre, vat dyes, sulphur dyes, the phthalocyanines, and dyestuffs of other composition than those already mentioned. Numerous structural diagrams, each representative of its particular group, are given, together with comments on the salient properties claimed. C—41.

Silk: Effect of Temperature on Absorption of Acid and Direct Dyes. ("Die Aufnahme von sauren und substantiven Farbstoffen durch Wolle, Seide und Ardilfaser in Abhängigkeit von der Färbetemperatur.") E. Elöd and H. G. Fröhlich. *Melliand Textilber.*, 1950, **31**, No. 5, 335-337. Temperature/absorption curves have been prepared to demonstrate the different absorption rates of wool, Ardil and silk for acid and direct dyes. Since the degree of swelling is similar in all three fibres, and since, in spite of the difference in fibre surface of wool and Ardil, the dyeing behaviour of the last two fibres is similar, it appears that the ratio of polar to non-polar groups in the fibre influences the absorption of dye and also its fastness to water. C—41.

Steam Consumption of Open and Closed Dye-Vessels. ("Berechnung des Gesamtdampfbedarfs einer Haspelfärberei.") E. Wachendorf. *Melliand Textilber.*, 1950, **31**, No. 6, 430-431. The steam requirements of open and closed winch dyeing vessels are compared in detail by reference to actual operational data. C—41.

Substantive Dyeing Aftertreatment: Use of Cation-active Substances. ("Kationaktive Verbindungen als Nachbehandlungsmittel für substantive Färbungen." I & II.) M. Bräuer. *Text.-Praxis*, 1950, **5**, No. 4, 242-244; No. 5, 305-308. The development of the use of cation-active substances for obtaining better fastness properties in substantive dyeings, is discussed. They are applied in after-treatments, and cannot be classified under one chemical group since they include condensation products of formaldehyde with cyanamide, guanidine, melamine, and the like, quaternary compounds, *etc.* No one of these (obtainable commercially) can be said to be generally superior to any of the others though it may be more effective in particular cases. The greatest progress, so far, has been achieved in securing better fastness to washing, acids, perspiration, cross-dyeing, and steam-pressing. Progress has also been made in their use as mordants for obtaining greater affinity in the case of certain dyestuffs, even-dyeing on cotton/rayon unions, and successful dyeing of glass, vinyl resin and alginate fibres. The mode of application of these cation-active substances is discussed in some detail. C—41.

Uneven Tension During Manufacture as a Source of Streakiness in Dyed Rayon-Hanks. ("Streckungsschwankungen im Herstellungsprozess der Kunstseide als Ursache von streifigen Ausfärbungen im Strang.") Werner Himmelreich. *Kunstseide u. Zellwolle*, 1950, **28**, No. 4, 132, 134. Uneven dyeing of rayon in hank form may be due to insufficient cleansing or lack of attention during dyeing. A major cause, however, is uneven tension to which the material has been subjected during manufacture. An actual case is described in which a number of tests were carried out to prove this point. C—41.

Uniform Dyeing of Wool/Rayon Mixtures. ("Das Unifärben von Halbwolle und verwandten Materialen.") Karl Woyatschek. *Melliand Textilber.*, 1950, **31**, No. 6, 415-419. Single- and double-bath processes, for securing uniform dyeing of wool/rayon and similar wool mixtures, are described. After-treatments for improved fastness are also dealt with. C—41.

Warp Dyeing. S. Emmott. *Fibres*, 1951, **12**, No. 1, 9-10. A summary is given of the paper on "The Dyeing and Preparation of Yarn for Colour-Woven Goods" presented at the Textile Institute conference* on yarn preparation. (*See *J. Textile Institute*, 1951, **42**, A140.) C—41.

Naphthols: Use as Developers for Diazotized Direct Dyes. C. H. Young. *Canad. Text J.*, 1950, **67**, No. 26, 60. A brief account of investigations carried out to determine whether diazotised direct dyes developed with a Naphthol AS yield dyeings of better fastness to light than when developed with an ordinary developer. The results show that wherever there is an improvement in light fastness the increase seems to occur only in heavy shades. W—41.

Dyeing of Wool with Vat Colours with Particular Emphasis on the Anthraquinone Types. A. E. Weber. *Amer. Dyest. Rep.*, 1951, **40**, 78-83. Most of the anthraquinone vat dyes can be applied to wool to give light, medium and full shades, including black without any undue adverse effect on the fibre. The process is covered by U.S.P.2,508,203. The chemicals of primary importance are caustic soda, sodium hydrosulphite and common salt, and their functions in this connection are discussed. Worsted top was dyed in an enclosed, experimental machine with one-way flow. The dye is dissolved in a stock vat which contains rather high concentrations of caustic soda and hydrosulphite, and is then added to the dye bath which contains the wool, salt and moderate amounts of alkali and hydrosulphite at a low temperature. After rinsing, backwashing is often necessary before drying. An ideal machine for dyeing wool top with vat dyes is defined, with special reference to pump pressures. Details are given of suitable quantities of caustic soda and hydrosulphites for various liquor ratios, and of suitable quantities of common salt for use with various vat dyes. Conditions of temperature, time and *pH* are stated. A method for applying indigoid and thioindigoid vat dyes is described. The general properties of vat dyeings on wool are discussed, including the effect of chlorination, the presence of other fibres, dyeing yarn and piece goods, and the cost of the process. W—41.

Warp Streaks in Viscose Filament Linings: Elimination. L. E. Moody. *Canad. Text. J.*, 1951, **68**, No. 2, 52. The writer recommends pad dyeing in the loom state wherever loom stains and sizing will permit. The dip-nip method is considered preferable to the method in which cloth enters directly into nip and the dye liquor is fed from storage tanks to a spray pipe aimed at the top roller just before the nip. Low temperature direct dyeing colours are usually satisfactory for covering warp streaks. W—41.

Dyeing, Printing and Finishing of Viscose Rayon Piece Goods. E. Broadbent. *Canad. Text. J.*, 1951, **68**, No. 2, 47-52. Modern processes used in dyeing, printing and finishing viscose rayon are discussed. The subjects mentioned include boiling-off, pad-dyeing of rayons, the festoon dryer, the printing operation, and the use of gums. W—41.

Loose Wool Dyeing. Longclose Engineering Co. Ltd. *Text. Merc.*, 1951, **124**, 333. An improved version of the C.D.B. enclosed, pear-shaped, loose wool dyeing machine is described. The circular dyeing chamber has an extension at one side to house the liquor-circulating propeller. The wool is held stationary between two perforated plates, and is not subjected to pressure. An auxiliary pipe in the propeller chamber keeps live steam away from the wool. Loading has been simplified, and low steam consumption is claimed. W—41.

Levelness in Wool Dyeing. *Wool Rec.*, 1951, **79**, 977-981. The problem of attaining levelness in dyeing loose wool, slubbing, yarn and piece goods is discussed. Special reference is made to the level dyeing of cheeses. W—41.

(J)—PRINTING

Calico Printing: Harmonising of Colours. ("Harmonische Kolorienung in der Stoffdruckerei.") H. Blum. *Melliand Textilber.*, 1950, **31**, No. 4, 282-284. The securing of a harmonious rendering of colours in calico printing presents difficulties which this article suggests may be overcome, for instance, by insisting that the original colour design should not be done on paper, as the appearance on cloth may be vastly different. Colour combinations and mixtures based on the chief colour tones are proposed and presented in two lists. C—4J.

Printing Blankets. Anon. *Text. Rec.*, 1950, **68**, November, 103-104. After considering the functions of the backgrey which is used in conjunction with the ordinary type of printing blanket, the disadvantages of the latter are discussed. The grooved rubber blanket that has been introduced to overcome some of these defects is described and its advantages and disadvantages are indicated. Mention is made of the washer machine used in conjunction with the grooved rubber blanket. C—4J.

Screen Printing: Screen Tensioning Machine. Cheskova Ltd. *Dyer*, 1950, **104**, No. 11, 485, 487. A new machine for holding and tensioning gauze while it is being fixed to a printing frame is described and shown. C—4J.

Textile Printing: Use of Adhesives. Anon. *Dyer*, 1950, **104**, No. 11, 455-457. The use of gums, waxes, and resins as adhesives in roller, screen, and block printing is discussed. C—4J.

Intensifying Effect of Urea in Printing. ("Untersuchungen über die intensivierende Wirkung von Harnstoff im Zeugdruck.") R. Haller. *Melliand Textilber.*, 1950, **31**, No. 5, 349-351. Investigations into the mechanism whereby urea intensifies prints have not met with success. A probable explanation, that acid and direct dyes undergo a greater degree of dispersion, was not supported by tests involving dialysis and diffusion into gelatine. Urea exerts a swelling action on starch, but similar printing results were obtained with gum tragacanth and gum arabic. Urea can be recovered unchanged by washing out. C—4J.

Pigment Printing. ("Studien an Pigmentdrucken.") R. Haller. *Text. Rdsch.*, 1950, **5**, No. 10, 405-412. The development of the pigment-printing of textiles is surveyed and various methods described. Two types of pigments can be distinguished, namely, the older, continuous surface high-dispersion type and the more modern coarse pigments exemplified by Ari-dye and Orema dyes. The nature of the attachment of the pigments to the surface of the fibre is discussed. C—4J.

Roller-Printing Problems. Anon. *Text. Merc.*, 1951, **124**, No. 3226, 192, 195; No. 3227, 240, 243. The problem of damaged printing rollers is discussed from the following aspects: (*a*) rollers, (*b*) print pastes, colours, and chemicals, (*c*) water, (*d*) cloth and back-greys, and (*e*) chromium plating. C—4J.

Screen Printing: Heavy-squeegee Lifting Device. ("Rakelhebevorrichtungen.") R. Künzl. *Melliand Textilber.*, 1950, **31**, No. 5, 356-357. Manual operation of heavy doctor blades is very difficult or impossible without some mechanical assistance for lifting the blade. A simple lifting device and its use is described. C—4J.

Solvitoses: Starch Products with New Properties. ("Solvitosen, Stärkeprodukte mit neuen Eigenschaften.") F. A. Möller. *Melliand Textilber.*, 1950, **31**, No. 6, 419-422. Ether and ester derivatives of starch are described. [See French version in *Teintex*, 1950, **15**, No. 8, 373-379 (*J. Textile Institute*, 1951, **42**, A125)]. C—4J.

Technology of Vat-dyes in Printing. ("Zur Technologie der Küpenfarbstoffe für den Zeugdrack.") Hermann Berthold. *Melliand Textilber.*, 1950, **31**, No. 6, 422-423. The conditions are described for applying "Suprafix" vat dyes to printing process. C—4J.

Tragacanth: Comparison with Modern Thickening Agents. ("Tragant im Vergleich zu neuzeitlichen Verdickungsmitteln.") K. Walter. *Melliand Textilber.*, 1950, **31**, No. 5, 351-356. It is shown that the modern thickening agents are superior to tragacanth whether it be used alone or with a starch. Specimens illustrate the use of both types of agents in roller- and screen-printing, wherein greater evenness and purity of colour can now be obtained with such substances as Alkagum and "Tragu" S. C—4J.

Warp Prints and Imitations. ("Kettendruckgewebe und Imitation.") R. Schulze. *Melliand Textilber.*, 1950, **31**, No. 5, 322-324. The difficulties associated with warp printing are discussed. The print is made on warp threads which have been carefully woven as a "preliminary" weave. After printing, the weft is cautiously removed prior to the final weaving. Good, strong warp threads are essential as broken ends are difficult to match up. Imitations are characterised by the sharpness of outline. C—4J.

(K)—FINISHING

Designing Moiré Effects. ("Moiré Musterung.") E. Ullrich. *Textil-Praxis*, 1950, **5**, No. 3, 170-171. Methods of obtaining moiré effects are briefly described. C—4K.

Improving Fabric Shrink-resistance. ("Comment améliorer la resistance au retrait des tissus.") J. Duval. *L'industrie text.*, 1950, **67**, March, 118-119. The use of alkylated methylol melamines to increase resistance to shrinkage and felting is frequently accompanied by reduced tensile strength, particularly in the

case of cotton or rayon. It has been found that the addition of urea and thiourea overcomes this difficulty to a considerable extent with little, if any, impairment of the shrink-resistance process. The method is described and data given. C—4K.

Polyamide Suspensoids: Use in Textile Processing. J. S. Trevor. *Text. Rec.*, 1950, **68**, November, 108. The properties of polyamide suspensoids as finishes for textiles, and a method of application are briefly described. C—4K.

Resorcinol: Applications for Textiles. E. W. Shand. *Rayon Synth. Text.*, 1950, **31**, No. 11, 79-80, 82. Some uses of resorcinol in the textile industry are described briefly. C—4K.

Variable Speed Drives on Modern Finishing Ranges. F. A. Westbrook. *Text. Mfr*, 1950, **76**, November, 549-550. Some specific examples of the application of variable speed drives to finishing machinery (in the U.S.A.) are discussed. C—4K.

Chemistry and the Textile Industry. M. Harris. *Chem. & Engng News*, 1951, **29**, No. 1, 35-36. Some chemical developments in the field of textiles are discussed, with respect to the use of chemicals as raw materials for the production of synthetic fibres, and also as processing and finishing agents. C—4K.

Origin of Fishy Odour in Materials Treated with Melamine- or Urea-formaldehyde Resins. ("Nachweis von Fischgeruch in Geweben, die mit Carbamidharz ausgerüstet sind.") W. Kraus. *Text. Rdsch.*, 1950, **5**, No. 10, 395-399. Under certain conditions, materials which have been treated with a urea- or melamine-formaldehyde resin develop a fishy odour, which is generally believed to be due to the generation of trimethylamine. A method is described whereby trimethylamine can be detected chemically irrespective of whether it occurs as a free base or otherwise. C—4K.

Embossing Process for Vinyl Films. Paul Dornbusch. *Modern Plastics*, 1950, **28**, No. 4, 72-73. A new embossing process for vinyl plastic sheets, and others, is described. The new technique, known as Echolux, produces an effect which creates the illusion of depth. The patterns are made up of a multitude of fine parallel lines, which pick up and reflect light at various angles, so giving a flat surface a three-dimensional appearance. Some examples of these designs are shown. C—4K.

Milling of Rayon Staple Fibre Fabrics. ("Ein neuartiges Gewebe aus Zellwolle.") Otto Heimeran. *Melliand Textilber.*, 1951, **32**, No. 1, p. 67. A brief description is given of a felted rayon staple fibre fabric, which is wool-like in both appearance and handle, and which has little tendency to crease. It has been successfully used in various applications, including clothing, curtaining, and upholstery. Owing to the nature of its manufacture it has no tendency to shrink. The manufacturing process which, it is claimed, is very simple, is covered by German Patent Specification No. 801,775. C—4K.

The Calender and the Mangle in the Finishing Process. ("Der Kalender und die Mangel in der Ausrüstung.") E. Meyer. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 71-77. A general discussion is given on the types of calender in use in the cotton, linen and rayon industries, and on the finishes obtainable. C—4K.

Weft Straightening Machine. G. Durrant & Sons Ltd. *Brit. Rayon & Silk J.*, 1950, **27**, December, 74-75; *Text. Rec.*, 1951, **68**, January, 110. An illustrated description is given of an improved model of the "Durrant" weft straightening machine, the chief feature of which is a motorised drive for the adjustment of the aligning rollers. C—4K.

Distortion, Rigidity and Shrinkage: Their Relationship to Wet and Dry Finishing. *Wool Rec.*, 1951, **79**, 631, 633, 635. The causes of distortion in light-weight cloths are stated, and suggestions made for the correction and elimination of this fault. Scouring, tentering, open-width scouring, and crabbing are among the subjects discussed. W—4K.

(L)—PROOFING

Mothproofing-detergent Combinations. H. C. Borghetty, W. N. Pardey and O. L. Sherburne. *Amer. Dyest. Rep.*, 1951, **40**, 119-121. A combined mothproofing and washing agent comprises a substantive cation-active mothproofing agent and a non-ionic synthetic detergent. The stock solution consists of 6 parts of 3:4-dichlorobenzyltriphenylphosphonium chloride dissolved in 34 parts of

mono*iso*octylphenyl ether of polyethylene and 60 parts of water. It can be used either in the mill or in the household. The results of a series of trials on 3 types of fabric treated with 3:4-dichlorobenzyltriphenylphosphonium chloride and Eulan CN and subjected to a number of repeated laundering treatments show that, whilst the latter gives protection indefinitely, the former withstands only limited soap and water washes, but is resistant to washing with a non-ionic detergent and to dry cleaning. W—4L.

PATENTS

Felts for Papermaking Machinery: Treatment. The Orr Felt & Blanket Co. B.P.644,088 of 4/10/1950. Papermaking felt is impregnated with a silicone resin, excess of resin is removed, and the felt dried for approximately 3 hours at 225-250° F. In an example, the resin pick-up is 22 per cent. The treated felt has increased abrasion resistance and a relatively short wetting time. W.

Milling or Scouring Machines: Improvements. Sellers & Co. (Huddersfield) Ltd. and E. R. Sellers. B.P.646,616 of 22/11/1950. In a milling or scouring machine, hydraulic means are used for weighting the trough lid, for adjusting and holding the position of the guide rollers, and for balancing the draft board. W.

Wool Scouring Machines. W. H. Dean and W. H. Robinson. B.P.650,419 of 21/2/1951. The settling and side tanks of wool scouring machines are provided with high-pressure water and steam pipes with nozzles directing jets of water at various angles to the parts of the tanks where major deposits of extraneous matter occur. The cleaning of the tanks by this device is quicker and more thorough than with the use of manually-controlled hose pipes. W

Permanently-set Hard Twist Wool Yarn. R. J. Jackson (to Bigelow-Sanford Carpet Co. Inc.). U.S.P.2,509,347/8 of 30/5/1950. Dyed wool yarn for pile weaving is hard twisted and reeled into skeins, which are steamed in a wetted, relaxed, kinky condition, and then dried and wound on spools under tension. Saturated steam is used at a pressure of not less than 5 and not more than 40 lb. per sq. inch for a time which does not exceed the severity of the steaming treatment represented by 30 minutes at 40 lb. per sq. inch pressure. The wool is protected from damage due to oxidation during steaming by treatment with acid, preferably acetic acid or sodium acid sulphate. This produces a permanently-set, highly-twisted yarn for the production of "pebbly textured pile surfaces". W.

Feed Box for Fibre Scouring Machines. E. H. Brooks, Sen. U.S.P.2,533,218 of 12/12/1950. An endless conveyor carries the fibre to a perforated, rotating feed roller, and then past a rotary, toothed roller to remove some of the stock; the remainder of the stock is removed from the feed roller by a doffer roller, and is deposited through a chute into a washing tank. W.

5—ANALYSIS, TESTING, GRADING AND DEFECTS

(A)—FIBRES

Conditioned Fibre Weight Per Centimetre: Determination. Textile Institute. *J. Textile Institute*, 1950, 41, No. 10, S7-10. Tentative textile specification No. 19 which covers the determination of conditioned fibre weight per centimetre is presented. Four methods of carrying out the test are described: (1) for individual complete fibres, (2) for individual fibres cut to a definite length, (3) bundle method (known number of fibres), and (4) bundle method (variable number of fibres). Two methods for cutting known length of fibres are also described. C—5A.

Fibre Testing: Methods of Sampling. Textile Institute. *J. Textile Institute*, 1950, 41, No. 10, S1-6. This tentative textile specification No. 18 describes recommended methods for sampling textile fibres for testing purposes. These are (1) zoning method, (2) dye sampling method, (3) cut-square method, and (4) tong sampling method. Some approximate values of coefficients of variation of fibre properties, and values of number of fibres required for various percentage accuracies of the mean are tabulated. C—5A.

Moisture-content Determination by Electrical Measurement. Part II. ("Feuchtegehaltsbestimmungen durch elektrische Messungen." II.) H. Mahlo and K. Thym. *Textil-Praxis*, 1950, 5, No. 3, 176-180. The accuracy of electrical

devices for measuring moisture content depends not only on the characteristics of the electrode, but also on the type of the material, and the form in which it is being tested. For instance, wool gives less consistent and less accurate results than cotton, and results differ according to whether the material is in the form of loose fibre, spun yarn, or woven fabric. These factors are discussed and comparative figures are presented. The varied applications of electrical moisture measuring methods at different stages in textile processing are described. (See *J. Textile Institute*, 1951, **42**, A170.) C—**5A.**

Testing Rayon Fibres: Methods. ("Metodos de ensayo de las fibras artificiales.") J. R. Arderiu. *Ingenieria Text.*, 1949, **16**, November/December, 293-308. After reviewing the faults arising in rayon fabrics, most of which are usually due to processing faults prior to weaving, the author deals with the difficulties encountered in making tensile tests, for example, determination of rate of extension, variation of results obtained by different machines, the variation of tensile strength (for a given material) with count, the differences in results with variation in length of specimen, and variations in test results from one day to the next owing to changes in relative humidity. Each of these points is discussed in detail with data and illustrations. C—**5A.**

The Silk-conditioning House at Lyons: History and Reorganisation. ("La Condition Publique des Soies de Lyon.") P. Dailly. *Bull. Soies Soieries*, 1950, **74**, 15th December, 23, 25; 31st December, 21, 23. A concise account is given of the history of the Silk-conditioning House at Lyons. The primary functions of the establishment are explained, namely, determination of moisture content for marketing purposes; determination of substances other than silk, for example, gum and lubricant; determination of count; testing of properties and examination of finishes; and investigation faults occurring in fibres and fabrics. Details are then given of the modernisation and reorganisation plans. C—**5A.**

Weighting of Silk: Calculation. ("Die Berechnung der Seiden-erschwerung.") J. Laurenzen. *Textil-Praxis*, 1950, **5**, No. 3, 160-161. Calculations for determining the true percentage weighting of silk are presented. C—**5A.**

Analysis of Fibre Mixtures: Use of Density-Gradient Tubes. J. M. Preston and M. V. Nimkar. *J. Textile Institute*, 1950, **41**, No. 11, pp. T446-454. A simple apparatus is described for the determination of the densities of textile fibres. The fibre sample is introduced into a cylinder containing liquids which provide a suitable density gradient down the cylinder, and the level at which the sample floats is determined. Tables are given showing the densities of some fibres measured in water and in dry organic liquids. The method described can be used to identify fibres. An application of the procedure to the quantitative analysis of binary fibre mixtures is also described. C—**5A.**

Fibre Length: Designation System. ("Zur Bezeichnungsfrage bei der Faserlangenmessung.") H. Sommer and H. J. Henning. *Melliand Textilber.*, 1950, **31**, No. 5, 310-313. Proposals are put forward for modifying the methods of designating the average fibre length, since the import of present systems is dependent on the manner of selecting the average. The frequency distribution of length within the sample, the relationship to diameter, density, *etc.*, must be taken into account, but not necessarily unilaterally. C—**5A.**

Natural and Synthetic Fibres: Structure and Properties. ("Über die Struktur und Eigenschaften von natürlichen und künstlichen Faserstoffen.") E. Elöd. *Text.-Praxis*, 1950, **5**, No. 4, 209-213. An outline is given of the structure and properties of many of the natural and synthetic fibres in current use in the textile industry. C—**5A.**

New Fibres: Dangers of Indiscriminate Use. ("Quality Control and the New Fibres, Part I.") O. Clegg. *Text. Merc.*, 1951, **124**, No. 3225, 141, 143, 144 (*to be continued*). The author points out the danger to the development of man-made fibres of their indiscriminate use as a substitute for natural fibres which are in short supply. Successful application of the new fibres depends on a knowledge of their properties, and in this introductory article durability, wear testing, and warmth and handle are briefly considered. C—**5A.**

Synthetic Fibres: Properties and Quality Control. Part 2. O. Clegg. *Text. Merc.*, 1951, **124**, No. 3226, 185, 187, 188. Continuing his discussion[1] of the properties of the new synthetic fibres with respect to the production of quality

fabrics, the author deals with appearance, strength (including testing), moisture content, and resistance to chemical and biological attack. (Part 1, see above Abstract.) C—**5A.**

Wool Labelling Law: Relaxation. *Amer. Wool & Cotton Rep.*, 1951, **65**, No. 7, 50. A recent ruling of the Federal Trade Commission indicates that it will not object to the following form for labelling:—"100 per cent. reprocessed wool—This reprocessed wool has been made entirely from wool clips which were originally woven entirely from virgin wool." " 100 per cent. re-used wool—This re-used wool has been made entirely from wool clips which were originally woven entirely from virgin wool." W—**5A.**

Tops: Determination of the Nep Count. F. Monfort. *J. Textile Institute*, 1951, **42**, P81-85. The nep counting method used at the laboratory of Peltzer et Fils is described. 5 cm. lengths of sliver are cut, preferably at distances exceeding 20 cm. Each slice is opened out on a black card, and the neps counted. The mean nep count is expressed per unit weight of sliver. The distribution of neps was found to follow the Poisson law. W—**5A.**

(B)—YARNS

Bobbin Unbalance: New Testing Instrument. Universal Winding Co., Atwood Div. *Text. World*, 1950, **100**, November, 176. An electronic instrument, the dynamic-balance indicator, by means of which the unbalance of bobbins can be measured, is announced. C—**5B.**

Breaking Load and Extension of Single Threads of Yarn: Determination. Textile Institute. *J. Textile Institute*, 1950, **41**, No. 10, S16-19. Tentative textile specification No. 21 is presented. This covers the determination of breaking load and extension of single threads of yarn by means of constant-rate-of-load testing machines. C—**5B.**

Scientific Instruments for Textile Research. W. H. Watson and J. Riley. *Text. Wkly*, 1950, **47**, No. 1191, 100, 102, 104; No. 1192, 161-162. The use of some scientific instruments in textile research is discussed. The following instruments are dealt with: the "noise meter", the stroboscope, the photoelectric yarn evenness tester, the beta gauge yarn or sliver regularity tester, and tension meters. C—**5B.**

Standardising Yarn Count Systems. ("Betrachtungen zur Normung eines internationalen und eines Querschnitts-Numerierungssystems.") H. Böhringer. *Melliand Textilber.*, 1950, **31**, No. 4, 233-236. A discussion on recently proposed yarn count systems includes an explanation of one developed in Germany, and the arguments in favour of its adoption. The adoption of a cross-section numbering system is urged in view of the increasing range of densities covered by the materials used in the textile industry, and the effect of the degree of hygroscopicity. C—**5B.**

Evaluation of the Utility of Yarn by Combining Physical Property Data. ("Eignungsbilder für Garne auf Grund ihrer physikalischen Eigenschaften.") Max Matthes. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 33-37. The characterisation of a yarn by one or other property, notably tensile strength, is insufficient to describe its ultimate utility in a fabric, for instance, in respect of resistance to wear which involves abrasion resistance, resistance to rupture on flexing, and so on. Extensibility must also be considered in relation to elasticity. Comparative evaluation of yarns, even where identical material is involved, requires very similar conditions of test, for example, similarity in cross-sectional area, density, length of test specimen, and so on. A method is described for combining the results of four principal tests, namely, tensile strength, elongation at rupture, evenness of yarn (as defined by breaking stress regularity), and transverse strength (abrasion test). Though the results of the different tests are given in varied units, the height of a column, representing the sum of percentage values, gives an over-all appreciation of the quality of one yarn as compared with another. C—**5B.**

Electronic Instruments: Applications in Textile Industry. Anon. *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1658-1659. Some uses of electronic instruments in the textile industry are briefly outlined. These include moisture meters, yarn irregularity testers, thickness meters, and cloth-guiding mechanisms. C—**5B.**

Yarn Cross-sections: Methods of Counting the Numbers of Fibres. F. Monfort and T. Neirynck. *J. Textile Institute*, 1951, **42**, P75-80. A laboratory method for the direct counting of fibres in yarn cross-sections is described. The yarn, previously waxed for short lengths of 0·5-3 mm., is cut in sections and placed on slides ruled in squares. Counting is done under a microscope either by reflected or by transmitted light. W—**5B.**

(C)—FABRICS

Military Fabrics: Determination of Permeability to Water. ("Étude et mesure de la porosité des tissus militaires.") —. Lepine. *L'industrie text.*, 1950, **67**, April, 172-175. A detailed description is given of the principles, construction, and operation of the Schmerber "Porosimètre", an apparatus for determining the pressure required to cause water to pass through the interstices of a fabric, the fibres of which have been rendered waterproof. C—**5C.**

Testing of Textiles: Developments. J. Lomax. *Text. Rec.*, 1950, **68**, November, 99-100. In this second article[1] the author discusses the British Standard methods for testing the fastness to light and washing of coloured fabrics. The testing of yarn regularity is also discussed. ([1]See *J. Textile Institute*, 1951, **42**, A171.) C—**5C.**

Static Electricity: Measuring Instrument. Dunlop Rubber Co. Ltd. *Text. Mfr.* 1951, **77**, January, 41; *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1660. An illustrated description is given of the Baldwin-Dunlop "Statigun", a new portable instrument for measuring the static charge generated on the surfaces of materials such as yarns, fabrics, and plastics. C—**5C.**

Abrasion Resistance of Rayon Fabrics: Use of "Taber Abraser" Test Method. Margaret H. Zook. *Amer. Dyest. Rep.*, 1950, **39**, No. 24, pp. 795-800. Results are reported and discussed of tests on the abrasion resistance of twelve rayon fabrics using the "Taber Abraser". The three-wheel test procedure* was employed, and four combinations of wheels and loads were studied in order to determine whether any one of the combinations was more suitable than the others for any particular type or types of rayon fabrics. (*Zook, *J. Textile Institute*, 1951, **42**, A173.) C—**5C.**

Abrasion Testing. H. F. Schiefer. *J. Textile Institute*, 1950, **41**, No. 11, pp. P800-803. A report is given of a lecture on the testing of the abrasion resistance of fabrics with particular reference to the Schiefer abrasion testing machine.* (**J. Textile Institute*, 1949, **40**, A409.) C—**5C.**

Cotton Fabrics: Studies of Wear and Ageing. Mary E. Murdison and Jessie S. Roberts. *J. Textile Institute*, 1950, **41**, No. 11, pp. T429-445. The state of wear of some cotton fabrics has been investigated using the Congo Red microscopic test, fluidity measurements, and strength tests. The following studies were carried out: (1) the effects of certain heat treatments (for example, steam drying and ironing) on cotton sheeting, (2) the effects of weathering on cotton sheeting, (3) normal and controlled wear in cotton tea towels, (4) ageing as observed in cottons from early American, Asiatic, and European civilisations, and (5) wear in used cotton clothing and textiles. The results are presented and discussed, and several photomicrographs of cotton fibres are shown. C—**5C.**

Determination of Warp and Weft "Take-up", and Shrinkage During Finishing. ("Die in der Praxis ermittelte Kett- und Schusseinarbeitung und der Stoffeingang beim Färben und Appretieren.") K. Dietz. *Melliand Textilber.*, 1950, **31**, No. 5, 321-322. The various factors which influence the amount of "take-up" by warp and weft during weaving and the finishing processes are discussed. These include the nature of the weave, prior treatment of the yarn, and the application (or non-application) of mechanical shrinkage-preventing processes. A table is given wherein various types of weaves of different materials are presented with data on their "take-up" and shrinkage characteristics. C—**5C.**

Penetration and Wetting of Fabrics: Measurement. Charles R. Trommer. *Amer. Dyest. Rep.*, 1950, **39**, No. 24, pp. P811-812, 830. An apparatus and experimental technique are described by means of which it is hoped to separate the phenomenon of the surface wetting of textiles from the penetration of textiles by a wetting solution. The method depends on the measurement of the time required by a wetting solution to penetrate several layers of fabric. C—**5C.**

Polyethylene Insulating Tape. W. J. Miller. *Modern Plastics*, 1951, **28**, No. 5, 74-76. The results of tests on adhesive-backed polyethylene tapes are reported.

The properties tested include electrical properties (for example, insulation resistance, dielectric constant), thermal deformation, ageing, and resistance to bacterial attack. C—5C.

Rayon Cloth Calculations—Part I. A. T .C. Robinson. *Silk & Rayon Rec.*, 1951, **25**, No. 1, 110, 114, 117. After a general consideration of yarn diameter, the specific gravity of fibres, the compactness of fibres in a yarn, and the effect of twist on yarn count, the author deals with formulæ for the calculation of the diameter of rayon yarns. C—5C.

Worsted Barre Marks. W. J. Woolstan. *Text. World*, 1951, **101**, 134-135. Causes of barriness in worsted fabrics are listed, and suggestions made for keeping them to a minimum. Various types of barriness are illustrated. W—5C.

Extraction of Unsaponifiable Constituents from Wool Grease. Nopco Chem. Co. B.P.649,421 of 24/1/1951. Crude or refined wool grease is saponified with an amount of an alkali in excess (preferably by 25-40 per cent.) of that theoretically required for complete saponification; the mass is partly neutralised with acid to reduce the *pH* to 8·5-11·0, and is then extracted with a halogenated hydrocarbon solvent. Potassium hydroxide is preferred as the alkali, and ethylene dichloride as the solvent. The sterols are recovered quantitatively and are purer than those obtained by prior methods. W.

7—LAUNDERING AND DRY-CLEANING

Dry-cleaning Process for Cotton Waste and Greasy Wool. ("Des idées neuves dans le nettoyage à sec de la laine en suint, des déchets de coton et la degoudronnage des blousses.") L. Saller. *Industrie text.*, 1950, **67**, 149-152. The Hoffman dry-cleaning machine is described. When used with the new non-volatile petroleum derivative, "Fialasol", instead of trichlorethylene, it is claimed that an economic and effective method for removing greasy and oily matter from wool and cotton waste becomes available. C—7.

Soiling Fabrics by Printing, for Washing-Efficiency Determinations. ("Gedruckter Schmutzaeifenstoff zur Bestimmung der Waschwirkung.") Carl Z. Draves and Opal Sherburne. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 48-50. A formulation is given for a printing paste, by means of which, normal soil ingredients can be printed on to fabrics for testing the efficiency of washing agents. By this means, standard soil conditions of great uniformity can readily be obtained. C—7.

Synthetic Detergents: Progress in U.S. Production. F. D. Snell. *Chem. & Engng News*, 1951, **29**, No. 1, 36-38. It is reported that the 1950 sale of synthetic detergents ("syndets") in the U.S. was the highest on record. The consumption of and developments in soaps and other detergents are also mentioned. C—7.

8—BUILDING AND ENGINEERING

(A)—Construction and Maintenance of Buildings and Plant

New Rayon Producing Factory. Courtaulds Ltd. *Text. Mfr*, 1950, **76**, November, 534-535. A few details and illustrations of Courtauld's new viscose rayon producing factory at Carrickfergus, N. Ireland, are given. C—8A.

Textile Factories: International Comparisons. ("Comment conçoit-on à l'étranger l'installation générale d'usines textiles.") Anon. *L'industrie text.*, 1950, **67**, April, 162-163. A table is presented in which the average factory layout, power equipment, noise-suppression, air-conditioning, and lighting in seven different countries are compared. C—8A.

Textile Machinery and Accessories: Review. Anon. *Text. Industr.*, 1950, **114**, November, 104-213. A comprehensive illustrated review of modern American textile equipment is presented. Over 350 items are listed, each with a brief description and the name of the manufacturer. C—8A.

Textile Machinery and Accessories: Review. Anon. *Text. World*, 1950, **100**, November, 110-146, 238-258, 276-292. An extensive review is presented of all the new equipment for the textile industry that has been introduced in the *Textile World* during the year October, 1949, to September, 1950. Brief descriptions, with illustrations, are given and grouped according to processes. C—8A.

Textile Machinery: Developments During 1950. Anon. *Text. Wkly*, 1950, **46**, No 1188, 1680-1689 (5 pages). A brief summary is made of new British spinning, winding, and weaving machinery introduced during 1950. C—**8A.**

Constructional Materials: Testing Machines. A. Binns. *Pract. Engng*, 1951, **23**, No. 568, 92-93. Ten machines for testing various properties of constructional materials (such as hardness, fatigue, compression, and tensile strength) are illustrated, and modern trends in the design of such machines are discussed. C—**8A.**

Evolution of Textile Machinery Design. H. Marsden. *Brit. Rayon & Silk J.*, 1950, **27**, November, 74-77. The development of design is discussed under the following headings :—(1) improvement of existing machines in relation to mill needs, (2) improvement of standard machines in relation to parallel developments in other branches of engineering science, (3) development of new machines to meet mill needs (4) fundamental research on methods and principles of textile manufacture governing basic machine design, and (5) development of new machines as a result of original thought involving new conceptions of manufacturing methods. C—**8A.**

(B)—Fire Prevention

Fighting Textile Raw Material Fires. ("Neue Wege zur Bekämpfung von Textilrohstoffbränden.") H. Eibeler. *Textil-Praxis*, 1950, **5**, No. 3, 158-160. The great increase in efficiency of water as a fire-fighting medium by the addition of suitable wetting agents is pointed out. Penetration tests have been carried out on small quantities of compressed wool, cotton, jute, rayon, *etc.*, and only in the case of rayon was it found that the increased degree of penetration was insufficient to warrant inclusion of such agents. C—**8B.**

Fibre-dust: Danger of Fire. ("Feuergefahr durch Faserstaub.") W. H. Geck. *Melliand Textilber.*, 1950, **31**, No. 5, 332-334. The conditions under which fibre dusts become dangerous, with regard to fire, are described. Figures for the lower limit of dangerous concentrations of fibre dust include: cotton, 6·2 per cent. in air, and rayon 6·4 per cent. A major cause of so-called spontaneous ignition, is the electrical charge associated with such dusts, and which, under suitable conditions, gives rise to "dust-lightning". At the above quoted concentrations the minimum potential is about 1,200 volts. Means of removing dust are discussed. C—**8B.**

(C)—Steam Raising and Power Supply

Power Transformers: Installation and Care. Anon. *Text. Mfr*, 1950, **76**, November, 525-526. Some information is given on the installation and maintenance of power transformers. C—**8C.**

Re-Electrification of a Textile Mill. Anon. *Text. Mfr*, 1950, **76**, November, 521-524. A brief illustrated description is given of the Black Dyke Mills, Queensbury, with special mention of the electrification scheme which has been recently completed. C—**8C.**

Steam Storage. Anon. *Dyer*, 1950, **104**, No. 13, 648-654 (5 pages). Thermal storage (steam and hot water) systems are discussed with particular reference to the Ruth's type of steam accumulator. C—**8C.**

Textile Waste Waters and Stream Pollution. J. A. McCarthy. *Amer. Dyest. Rep.*, 1950, **39**, No. 22, 732-735. After considering industrial waste waters, particularly those from textile mills, the author explains how streams can handle a certain maximum amount of impurities without becoming polluted. The amount of oxygen consumed in water in such natural purification, called the biochemical oxygen demand (B.O.D.) is discussed. A classification of streams according to degree of pollution is explained, and various means of reducing pollution by industrial wastes are considered. C—**8C.**

Boiler-Feed Systems. Edward Ingham. *Dyer*, 1951, **105**, No. 2, 118-120. Some general remarks are made on the installation and maintenance of boiler water-feed systems (both injectors and pumps). C—**8C.**

Electricity in the Textile Industry. Anon. *Text. Wkly*, 1951, **47**, No. 1192, 154, 156. A brief survey is given of some of the developments in the electrification of textile mills made during 1950. C—**8C.**

Electricity Production: Economical Loading of Generating Plant. N. Don. *Elect. Rev.*, 1951, 148, No. 3817, 112-115. A graphical method for calculating the most economical loading of steam driven generating sets is presented and examples of its use are given. C—8C.

Electricity Supplies: New Tariff for Large Power Users. F. Catherall. *Text. Wkly*, 1951, 47, No. 1193, 220-228 (5 pp.). After outlining a proposed new tariff scheme for large users of electrical power, the author discusses load spreading and cutting, and a new standard agreement by the North-Western Electricity Board for large power users. C—8C.

Electrification of a Textile Mill. Anon. *Elect. Rev.*, 1951, 148, No. 3819, 209-214. An account is given of the electrification of a textile mill in which winding, warping, and weaving machinery have been converted from lineshaft drive to individual electric motor drive. C—8C.

Electronic Control of Motors. ("Elektronische Motorsteurung im Textilmaschinenbau.") R. Kretzmann. *Text.-Praxis*, 1950, 5, No. 4, 221-223. Electronic motor control circuits suitable for use on textile machinery are described. The article is based on American practice. C—8C.

Mechanical Stokers for Industrial Boilerhouses. R. F. W. Guy. *Text. Mfr*, 1950, 76, December, 593-594, 597. The former neglect of mechanical stoking, and the reasons for it, are referred to. Some types of mechanical stoker are described, with diagrams; considerations of labour, finance, output and available fuel are discussed. It is claimed that increased use of mechanical stokers is due to the immediate financial returns they give. Fuel savings of between 10 per cent. and 50 per cent. can normally be achieved. C—8C.

Medium Voltage Distribution Switchgear. Anon. *Text. Mfr*, 1950, 76, December, 588-591. Different types of electricity switchboard for industrial premises are described, with diagrams and tables. The importance of enclosing the equipment and making it accessible only to responsible persons is stressed. C—8C.

Reconstruction of Steam-boiler to Increase Output and Reduce Costs. ("Leistungsteigerung und Energieverbilligung durch Dampfkesselumbau.") R. Schulze. *Melliand Textilber.*, 1950, 31, No. 6, 433-435. Details are given of structural alterations carried out on steam-generating plant, and auxiliary services, to increase efficiency and obtain reduction in energy costs. C—8C.

Safety Valves: Discharge Capacity Tests. Dewrance and Co. Ltd. *Engineer*, 1951, 191, No. 4957, 121-124. The discharge capacities of two types of safety valves have been tested, and recommendations made for the amendment of the British Standards formula for the calculation of discharge capacity. C—8C.

Steam Economy by Means of a Circulating Pump in the Drying Process. ("Leislungssteigerung und Dampfersparnis mit Hilfe des Dampfkreislauf Strahlverfahrens.") Heinrich Stenger. *Kunstseide u. Zellwolle*, 1950, 28, No. 5, 160, 162-163. Optimum results are obtained when steam is kept in a state of motion in the drier. One method is to allow the steam to escape at the end of the coil furthest removed from the inlet; the exhaust steam is then used for other heating purposes. The method suggested, however, is more economical whilst being equally effective. After the steam has traversed the coil, it is brought back to a valve at the inlet and mixed with fresh steam. Provision is made in the valve for removing air from the system. The construction of the valve is shown diagrammatically. Reports on its efficiency are appended. C—8C.

Steam or Air Meter. Spirax Manufacturing Co. Ltd. *Pract. Engng*, 1951, 22, No. 564, p. 544. A simple steam (or air) flow meter is described. C—8C.

(D)—Power Transmission

Belt Drives. Anon. *Pract. Engng*, 1951, 23, No. 567, 66-67. Theoretical and practical aspects of (flat) belt drives are discussed with special reference to the Lenix pulley drive. C—8D.

Driving Belts: Factors Affecting Efficiency. P. W. Peel. *Text. Wkly*, 1951, 47, No. 1193, 230, 232. Fatigue, creep, slip, and centrifugal force are discussed as factors affecting the efficient operation of power transmission belts. C—8D.

Variable-Speed V-Belt Drive. Package Sealing Co. Ltd. *Engineering*, 1951, 171, No. 4435, 109. A new variable-speed unit for V-belt drives is described and shown. C—8D.

(F)—LIGHTING

Lighting Research. R. G. Hopkinson. *Light & Ltg.*, 1951, **44**, No. 1, 10-20. An account is given of the scope of the lighting research carried out at the Building Research Station, with mention of some of the experimental methods employed. C—**8F.**

Mercury Vapour Lamps for High Bay Lighting. J. N. Hull. *Light & Ltg.*, 1951, **44**, No. 1, 28-32. A new type of lighting unit is described which incorporates a high power mercury lamp and a reflector with light distribution characteristics suitable for high bays of relatively small width. C—**8F.**

(H)—WATER PURIFICATION

Filtration: Use of Filter Beds. J. A. Pickard. *Chem. Prod.*, 1951, **14**, No. 1, 4-6. After distinguishing between filtration and straining, the author considers, in general, the use of filter beds as separating media, and refers to some experiments on the effectiveness of such beds. C—**8H.**

Purifying Textile Factory Effluent: The Niers (Pista) Process. ("Reinigung textiler Abwasser.") M. Kehren. *Melliand Textilber.*, 1950, **31**, No. 5, 363-366. The Niers (or Pista) process for purifying factory effluent is described. C—**8H.**

9—SCIENCE

Control of Cotton Wilt by Soil Fumigation. J. T. Presley. *Down to Earth*, 1950, **6**, No. 1, 3 (through *Rev. appl. Mycol.*, 1950, **29**, November, 561). Tests were carried out to determine the effect of soil fumigation on the development of *Fusarium* wilt and *Verticillium* wilt at the Mississippi Agricultural Experiment Stations at Scott, where nematodes were abundant, and Clarksdale, where no nematode injury was observed. The results at Clarksdale were insignificant, but, at Scott, treated plots yielded seed cotton averaging 2,000 lb. per acre, untreated plots only 210 lb. per acre. It appears that indirect control of *F. vasinfectum* by combating nematodes is a means of controlling a soil-borne disease by applying a soil fumigant. C—**9.**

Cotton Wilt: Variation of *Verticillium*. J. T. Presley. *Phytopathology*, 1950, **40**, No. 5, 497-511 (through *Rev. appl. Mycol.*, 1950, **29**, November, 560). Studies have been made of the variability and genetic variation of the fungus in culture, its taxonomic significance, and varietal susceptibility to the disease. Most "strains" and "forms" are considered merely variants. Pathogenicity to cotton was associated with cultural type in greenhouse inoculation tests. The only Upland cotton variety to show resistance was Hartsville. C—**9.**

Formation of Bast-fibre in the Flax Stem. ("Entstehung und Verlauf der Bastfasern im Leinstengel—Ein Überblick über den gegenwärtigen Stand unserer Kenntnisse.") Walter Rüdiger. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 7-9. Modern views on the generation of bast fibres within the flax stem are given. C—**9.**

Fungi Growing on Jute. S. N. Basu and S. N. Ghose. *J. Sci. industr. Res., New Delhi*, 1950, **9B**, No. 6, 151-156 (through *Rev. appl. Mycol.*, 1951, **30**, No. 1, 39). Experiments at the Indian Jute Mills Association Research Institute, Calcutta, showed that *Penicillium citrinum* was the predominant species found on raw jute, yarn and hessian incubated in the shade at 100-80 per cent. relative humidity, several species of *Aspergillus* were also found. There was little mould growth at relative humidities below 85. Inhibition of one species by another is discussed. C—**9.**

Genetics of Lint Quantity Factors in American Cotton. T. R. Richmond. *Bull Tex. Agric. Exp. Sta.*, 1949, No. 716, 42 pages (through *Plant Breeding Abstr.*, 1950, **20**, No. 3, 528). From experimental results described it is concluded that the quantity of lint on seeds of cultivated varieties of American Upland cotton is determined by at least two genetic systems. Breeding methods are suggested on the basis of these findings. C—**9.**

Groundnuts: Abstract Bibliography. N. J. Morris and F. G. Dollear. *A.I.C. Publ. No. 151 U.S. Dept. of Agric.*, 1949, 231 pages. This is a compilation of references and abstracts on the chemistry and technology of the groundnut, *Arachis Hypogaea*, and its derived products. No mention is made of the production of fibres. The period covered by 1830-1939. C—**9.**

Beta-Amylase Activity: Inhibition by Cyanide. D. K. Roy and L. A. Underkofler. *Cereal Chem.*, 1950, 27, No. 5, 404-408. The effect of sodium cyanide on the saccharifying activity of amylase complexes from extracts of malt, ungerminated soya beans, wheat and barley, and solutions of commercial beta-amylase, has been investigated. The addition of cyanide had no effect on alpha-amylase activity, but either lowered or completely inhibited the activity of beta-amylase. C—9.

Flour Amylase Activity: Effects of Polyoxyethylene Monostearate. L. F. Marnett and R. W. Selman. *Cereal Chem.*, 1950, 27, No. 5, 349-358. An account is given of experiments that have been carried out to investigate the effects of polyoxyethylene monostearate on the maximum paste viscosities of wheat flour pastes and also pastes of corn starch and waxy maize. Maximum paste viscosity is regarded as a measure of the starch liquefying effect of alpha-amylase. C—9.

Internal Mechanism of Speciation in *Gossypium*. S. G. Stephens. *Bot. Rev.*, 1950, 16, 115-49 (through *Plant Breeding Abstr.*, 1950, 20, No. 3, 527). The literature is critically reviewed. It is concluded that success in transforming potentially valuable characters from one species to another will be inversely proportional to the frequency of small scale structural differences in the breeding material. C—9.

Punjab Cotton: Natural Crossing. M. Afzal and A. H. Khan. *Agron. J.*, 1950, 42, 14-19, 89-93 (through *Plant Breeding Abstr.*, 1950, 20, No. 3, 527). Natural crossing between red-leaved and green-leaved varieties of American and local cotton was studied under field conditions in the West Punjab. Natural crossing in continguous plants and rows was also studied. C—9.

Resistance of Cotton to Wilt. G. Ja. Gubanov. *Selekcija i Semenovodstvo* (*Breeding and Seed Growing*), 1950, No. 1, 79-80 (through *Plant Breeding Abstr.*, 1950, 20, No. 3, 528). Since susceptibility to wilt was found associated with large amounts of tannin in the wood cells, it is suggested that a crude tannin test might be used to test plant breeding material for resistance to wilt. C—9.

Rotting of Textile Fibres. R. W. Moncrieff. *Silk & Rayon Rec.*, 1951, 25, No. 1, 118, 121 (*to be continued*). The rotting of fibres by moulds and by bacteria is discussed with reference to research that has been carried out on this subject. Fungi are roughly classified and their "potency" indicated. The activities of some fungicides as rot-proofing agents are compared. C—9.

"Sore Shin" Disease of Cotton and Other Fibre Plants. T. Matuo. *Ann. phytopath. Soc. Japan*, 1949, 13, Nos. 3-4, 26-28 (through *Rev. appl. Mycol.*, 1950, 29, November, 561). Experiments are described in which growing cotton plants were inoculated with a culture of *Corticium vagum*, and proved susceptible, as did adult hemp, *Abutilon*, jute, and flax plants. C—9.

Antihistamine and Related Drugs: Chemistry. D. W. Adamson. *Chem. & Ind.*, 1951, No. 1, 2-7. An account is given (with 52 references) of the chemistry of antihistamine and related drugs. C—9.

Carcinogenesis: The Role of the Unpaired Electron. H. F. Park. *J. Phys. Colloid Chem.*, 1950, 54, No. 9, 1383-1384. It is pointed out that the well-known experimental methods for producing cancer bear a remarkable resemblance to a type of electron-unpairing reaction. Furthermore, agents for initiating and stopping free-radical reactions are identical, and this is also true of carcinogenesis. It is suggested that the entry of a free-radical into a living cell could produce a chain reaction resulting in a cancer. C—9.

Soil Proteins: Amino-acid Composition. J. M. Bremner. *Biochem. J.*, 1950, 47, No. 5, 538-542. The proteins of ten different soil samples have been hydrolysed and the amino-acid composition of the hydrolysate determined. In each case, the same twenty amino-acids were detected in the hydrolysates, but no free amino-acids were found in the soils. C—9.

Amino Acids and Amines: Estimation on Paper Chromatograms. R. J. Block. *Analyt. Chem.*, 1950, 22, No. 10, 1327-1332. Details are given for the preparation of one- and two-dimensional paper chromatograms for the separation of all the common α-amino acids and a number of volatile amines. C—9.

Amino-acids: Large-scale Separation on Filter Paper. C.-G. Hedén. *Nature*, 1950, **166**, No. 4232, 999-1000. A two-dimensional technique for the separation of comparatively large quantities of amino-acids on filter paper is described. C—9.

Amino-acids: Paper Chromatography: Permanganate as Spraying Agent. C. E. Dalgliesh. *Nature*, 1950, **166**, No. 4234, 1076. The use of potassium permanganate solution as a spraying agent for the detection of amino-acids (especially methionine) on paper chromatograms, is reported. C—9.

Amino-acids: Quantitative Paper Chromatography. L. Novellie. *Nature*, 1950, **166**, No. 4232, 1000. From an investigation of factors causing loss in the quantitative estimation of amino-acids by paper chromatography the author reports on (*a*) effect of using washed filter paper on amino-acid recovery, (*b*) effect of heat in the absence of solvent on the recovery of amino-acids from filter paper, and (*c*) effect of heat in the presence of solvent on amino-acid recovery. C—9.

Antimony: Detection by Means of Gossypol. P. W. West and L. J. Conrad. *Analyt. Chem.*, 1950, **22**, No. 10, 1336-1337. A sensitive spot test for trivalent antimony, that depends on the formation of an orange or red precipitate with gossypol, is described. C—9.

Colloidal Electrolytes: Determination by Dye Titration. H. B. Klevens. *Analyt. Chem.*, 1950, **22**, No. 9, 1141-1144. A method is described for the determination of the total amount of surface-active agent in a system by means of titration with a suitable dye. Best results are obtained if for anionic soaps a cationic dye is used, and for cationic soaps an anionic dye. In turbid or slightly coloured media a fluorescent dye may be used. C—9.

Copper: Colorimetric Determination. V. A. Gordieyeff. *Analyt. Chem.*, 1950, **22**, No. 9, 1166-1168. A colorimetric method for the determination of copper is described which is based on the formation of a complex precipitate when an aqueous solution of pyridine and salicylic acid is added to a solution of a copper salt. The complex dissolves in most organic solvents giving an intensely blue colour which may be used for the colorimetric determination. The method can be adapted for microprocedure. C—9.

History of Chromatography. H. Weil and T. I. Williams. *Nature*, 1950, **166**, No. 4232, 1000-1001. A search of the literature has shown that the phenomenon of chromatography was known and used (for example, in the purification of crude oil), though in a limited field, before Tswett's discovery. C—9.

Kjeldahl Microdeterminations: Source of Error. W. J. Wingo, O. L. Davis, and L. Anderson. *Analyt. Chem.*, 1950, **22**, No. 10, 1340. Attention is drawn to the fact that when boric acid is used to trap the ammonia distilled from a sample during a microkjeldahl determination, loss of ammonia occurs if the distillate is boiled before titration (as is often done to increase the sharpness of the end-point). C—9.

Oxygen in Organic Compounds: Direct Determination. C. H. Harris, D. M. Smith, and J. D. Mitchell. *Analyt. Chem.*, 1950, **22**, No. 10, 1297-1304. A new technique for the direct determination of oxygen in organic compounds is described. The sample is decomposed in a stream of helium and the pyrolysis products are circulated in a closed system over carbon at 1100° to 1500° C. until conversion of all the oxygen to carbon monoxide is complete. The composition of the resultant carbon monoxide-helium mixture is determined by means of a thermal conductivity bridge. C—9.

Pectic Substances in Cotton: Determination. S. M. Stark. *Analyt. Chem.*, 1950, **22**, No. 9, 1158-1160. A colorimetric method for the determination of pectic substances in cotton is described. It involves the reaction of the extracted pectic acid with carbazole to give a coloured reaction product. C—9.

Primary, Secondary, and Tertiary Aromatic Amine Mixtures: Quantitative Analysis. S. Siggia, J. G. Hanna, and Irene R. Kervenski. *Analyt. Chem.*, 1950, **22**, No. 10, 1295-1297. A method for determining primary, secondary, and tertiary aromatic amines in the presence of each other is described. The final analyses are acidimetric in nature. C—9.

Sodium Carboxymethylcellulose: Analysis. A. Z. Conner and R. W. Eyler. *Analyt. Chem.*, 1950, **22**, No. 9, 1129-1132. A method is described for the estima-

tion, and determination of degree of substitution, of sodium carboxymethylcellulose. The copper salt of the carboxymethylcellulose is precipitated, weighed, and analysed for copper iodometrically. C—9.

Sodium Pentachlorophenate: Colorimetric Determination. G. R. Wallin. *Analyt. Chem.*, 1950, **22**, No. 9, 1208-1209. Two colorimetric procedures for the estimation of sodium pentachlorophenate are described. One involves the use of copper sulphate, and the other the use of Methylene Blue hydrochloride to form coloured complexes. C—9.

Starch and Amylose: Determination in Vegetables. R. M. McCready, J. Guggolz, V. Silviera and H. S. Owens. *Analyt. Chem.*, 1950, **22**, No. 9, 1156-1158. The determination of starch and amylose in peas is described. The starch is solubilised with dilute perchloric acid and determined colorimetrically without previous acid hydrolysis by means of the sugar-anthrone-sulphuric acid reaction. Amylose is estimated colorimetrically with iodine. C—9.

Sulphydryl Groups: Amperometric Titration. S. Rosenberg, J. C. Perrone, and P. L. Kirk. *Analyt. Chem.*, 1950, **22**, No. 9, 1186-1187. An amperometric titration method for the estimation of microgram quantities of sulphydryl groups is described. A vibrating platinum electrode is used as a combination electrode stirrer. Some results obtained with denatured protein solutions are presented. C—9.

Tryptophane: Determination with *p*-Dimethylaminobenzaldehyde. J. R. Spies and D. C. Chambers. *Analyt. Chem.*, 1950, **22**, No. 9, 1209-1210. A method for the determination of tryptophane is described which involves condensation with *p*-dimethylaminobenzaldehyde in 19N sulphuric acid. The product so formed is then oxidised photochemically when a blue colour develops. The tryptophane is estimated by measuring the light transmittance of the coloured solution. C—9.

Two-dimensional Paper Chromatography: Multiple Paper Apparatus. S. P. Datta, C. E. Dent, and H. Harris. *Science*, 1950, **112**, No. 2917, 621-623. An apparatus which enables several two-dimensional paper chromatograms to be produced simultaneously is described. The desired number of papers is spaced out on a metal frame and the whole placed with one set of edges in the solvent. C—9.

Colorimetric Determination of Calcium Soap on the Fibre. ("Eine schnelle kolorimetrische Methode zur Bestimmung von Kalkseifen auf der Faser.") H. M. Ulrich. *Text. Rdsch.*, 1950, **5**, No. 9, 381-382. A rapid and accurate colorimetric method for the determination of calcium soap retained on the fibre is based on the formation of an alizarin lake. The lake is removed by an alcoholic solution of oxalic acid, and the alizarin is determined colorimetrically in weak ammoniacal solution. Details of the method are given. C—9.

Chromatographic Columns: Filter Paper Discs as Packing. L. Zechmeister. *Science*, 1951, **113**, No. 2924, 35-36. A method for the construction of a chromatographic column consisting of a glass tube packed with discs of filter paper, is described. C—9.

Dipeptides: Determination of Structural Formulæ by Chromatographic Method. M. Renard. *Bull. Soc. chim. Belg.*, 1949, **58**, 301-309 (through *Brit. Abstr.*, **AII**, 1950, June, 617). Glycylalanine, for example, can be distinguished from alanylglycine by treatment with nitric acid and concentrated hydrochloric acid, and hydrolysis. Alanine, glycine, and α-chloro-acid are produced. The chloro-acid is extracted with ether, and identified chromatographically. The amino acids are converted by more HNO_2-HCl treatment into the corresponding chloro-acids, which are separated and identified similarly. C—9.

Error in Zimmermann Microdetermination of Sulphur. ("Über eine Fehlerquelle bei der Mikroschwefelbestimmung nach Zimmermann.") G. Bussmann. *Helv. chim. Acta*, 1950, **33**, No. 6, 1566-1568. Strict adherence to Zimmermann's own conditions for his method of the microdetermination of sulphur may lead to low values being obtained. This difficulty is aggravated by the necessity for skill and experience in manipulation. Modifications whereby error may be eliminated, include the substitution of the cylindrical tube by an Erlenmeyer flask, cutting the decomposition tube into three sections, omitting the unnecessary preliminary solution of calcium in methyl alcohol, and the expulsion of air by carbon dioxide instead of the more dangerous hydrogen. C—9.

Methylated Sugars: Colorimetric Determination. (Miss) J. K. Bartlett, L. Hough, and J. K. N. Jones. *Chem. & Ind.*, 1951, No. 4, 76. A colorimetric method for the micro-estimation of methylated sugars in the degradation products of methylated polysaccharides is reported. The products are fractionated by chromatography and the intensity of the colour developed by each fraction with aniline phthalate is measured. There is a linear relation between colour intensity and concentration of the methylated sugar. C—9.

Paper Chromatography: Colorimetric Determination of Separated Amino-acids. ("Dosage colorimétrique des acides aminés séparés par chromatographie sur papier.") R. A. Boissonnas. *Helv. chim. Acta*, 1950, 33, No. 6, 1975-1982. A method has been developed for the colorimetric determination of amino-acids separated by paper chromatography. Difficulties arising from the meagre quantities of acid present and from impurities in the paper are overcome. Before the colorimetric determination, the paper is subjected to a treatment by alcoholic potash vapours by means of which ammonium ions are eliminated, so that the effect of the whiteness of the paper is eliminated. A ninhydrin-hydrindantin agent is used for the actual determination, by means of which 0·02 to 0·5 micromols of acid can be estimated. C—9.

Rapid Chromatographic Separation of Amino-acids. ("Séparation rapide des acides aminés par chromatographie ascendante bidimensionelle sur papier.") R. A. Boissonnas. *Helv. chim. Acta*, 1950, 33, No. 6, 1966-1971. Improvements in the experimental conditions for partition-chromatographic separation of amino-acids on filter paper have been effected by using solvents of low viscosity and smaller sheets of paper. It has been found possible to secure a quantitative separation of the amino-acids by using two different solvent systems. C—9.

Viscose: Ultra-violet Spectrographic Determination of Trithiocarbonate and Xanthate Content. ("UV-Untersuchungen an Viskose-Spektrophotometrische Bestimmung von Xanthogenatschwefel und Trithiokarbonat.") E. Schauenstein and E. Treiber. *Melliand Textilber*, 1951, 32, No. 1, pp. 43-47. The possibility of employing ultra-violet spectrographs for the rapid determination of xanthate and trithiocarbonate content in viscose has been examined, and the indications are that the method is feasible. In giving details of the investigation, the spectrography of viscose is discussed. C—9.

Brass Alloys: Properties. J. F. Stirling. *Pract. Engng*, 1951, 22, No. 564, 538-539. The properties and uses of brasses alloyed with such metals as aluminium, lead, iron, manganese, tin, nickel, and silver, are briefly described. C—9.

Fatigue in Metal. Anon. *Pract. Engng*, 1951, 22, No. 564, 534-535. The effects of temperature, corrosion, surface finish, plating, and welding, on the fatigue strength of metals are briefly discussed. C—9.

High-Pressure Autoclaves. Peter Farkas. *Chem. Prod.*, 1951, 14, No. 1, 10-11. Various types of high-pressure autoclaves are briefly described. C—9.

Platinum and Tantalum in Industry. Anon. *Times Rev. Ind.*, 1951, January, 22. The existing positions of platinum and its rival tantalum in industry are reviewed. American rayon producers are continuing with tantalum spinnerets, whereas British concerns have reverted to platinum-gold types on the grounds that tantalum spinnerets attract dirt in service. C—9.

Pure Oxide Refractories. D. Kirby. *Times Rev. Ind.*, 1951, January, 26-27. The importance to modern industry of pure oxide refractories, with their abnormal heat-resisting properties, chemical inertness and a high purity, is discussed. Mention is made of the use of recrystallised alumina as thread guides for synthetic textiles. C—9.

Cellulose and Derivatives: Structure: New Concepts. F. Happey. *J. Textile Institute*, 1950, 41, No. 10, T381-403. Experimental work on the structure of cellulose and its derivatives, concerned chiefly with X-ray and allied physical studies, is described. Nitration, acetylation and saponification are discussed. It is reported that crystalline secondary cellulose acetate has been made, the structure of which is based on isomorphic replacements in the lattice of tri-acetyl cellulose II. The theory of isomorphic replacements is used to explain, amongst other things, the possibility of nitrocellulose having a two-phase structure in the crystalline part, based on the known di- and trinitro lattices. Several X-ray photographs of cellulose and its derivatives are presented. C—9.

Cellulose and Proteins: Organic Chemistry. R. L. Elliott and R. L. Kitchen. *Dyer*, 1950, **104**, Nos. 7-10, 364-366. A brief account is given of some aspects of the organic chemistry of cellulose and proteins, including oxycelluloses and the chemistry of the newer protein fibres. C—9.

Clathrate Compounds and "Adducts" of Urea with Carbon-Chain Compounds. J. W. Smith. *Sci. Progr.*, 1950, **38**, No. 152, 698-706. The author describes recent developments in the chemistry of (*a*) clathrate compounds—addition compounds of quinol of the general formula $3C_6H_4(OH)_2M$ where M may comprise H_2S, SO_2, CH_3OH, CO_2, HCl, and severaal other compounds; (*b*) addition compounds or "adducts" of carbon-chain compounds with urea. C—9.

D-Glucose Dibenzamide from Pentabenzoyl-D-α-Glucose. V. Deulofeu and J. O. Deferrari. *Nature*, 1951, **167**, No. 4236, 42. The preparation of D-glucose dibenzamide by the action of methanolic ammonia on pentabenzoyl-D-α-glucose is reported. C—9.

Hemicellulose-content: Influence on Acetylation of Cellulose. ("Einfluss des Hemizellulosegehaltes und der Reaktionsfähigkeit von Zellstoffen auf ihr Verhalten bei der Azetylierung.") G. Jayme and U. Schenck. *Melliand Textilber.*, 1950, **31**, No. 3, 153-156; No. 4, 230-233. High-grade cellulose from sources other than cotton linters is, in spite of great advances in treatment, still not as good for the production of a cellulose acetate utilisable for all its known applications. The main characteristics determining the suitability of a cellulose for this purpose are colour, content of hemicelluloses and other non-cellulosic matter, average chain length and chain length distribution, and the structure. The nature of the hemicelluloses is discussed together with some practical methods for their removal. The effect of pre-treatment by glacial acetic acid on the acetylation properties of a cellulose has been studied and data are given for various woods, the content in different non-cellulosic materials being indicated. C—9.

Ribose Anhydride: Structure. R. W. Jeanloz, G. R. Barker, and M. V. Lock. *Nature*, 1951, **167**, No. 4236, 42-43. It is claimed that evidence now shows that the product obtained when the trityl group is removed from 1:2:3-triacetyl 5-trityl D-ribofuranose is 1:5′-5:1′-di-D-ribofuranose anhydride. C—9.

Alginates: Production from Brown Marine Algae. L. A. Bashford, R. S. Thomas, and F. N. Woodward. *J. Soc. Chem. Ind.*, 1950, **69**, No. 11, 337-343. A process for the production of calcium alginate (approximately 95 per cent.) from brown seaweeds is described, and investigations of the method made on a laboratory scale (with particular reference to the initial water-washing and acid-leaching stages) are reported. C—9.

All-Glass Mercury Circulation Pump. H. Kerner. *Chem. & Ind.*, 1951, No. 2, 24-25. Details are given of the construction of an all-glass mercury circulation pump designed for the continuous removal of distillate during vacuum distillations. C—9.

Fatty Acids: New Extraction-Plant. Price's (Bromborough) Ltd. *Chem. Prod.*, 1951, **14**, No. 1, 18-19, 28. An illustrated description is given of a new plant that has been set up for the solvent separation of stearines and oleines from crude fatty acid mixtures. C—9.

Luminous Poster-Inks. T. Hedley Barry. *Industr. Chem.*, 1950, **26**, December, 534, 540. The development and constitution of luminous printing inks are briefly discussed. C—9.

Nature of Branched Chain Linkage in Amylopectin and Glycogen ("Nature de la liaison d'embranchement du glycogène et de l'amylopectine.") G. C. Gibbons and R. A. Boissonnas. *Helv. chim. Acta*, 1950, **33**, No. 6, 1477-1481. Investigation of the position of linkage of exterior branches in both the amylopectin and glycogen molecules shows that probably 97-98 per cent. of the linkages occur in the 6-position. Oxidation, by periodic acid, was carried out with improved conditions, and the sensitivity of the chromatographic determination of glucose was also proved. Experimental details are given. C—9.

New Laboratory Pump. Research Appliance Co. (Pittsburgh, U.S.A.). *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1662. An illustration and very brief specification are given of the Corson-Cerveny micro-bellows pump. The pump may be adapted to deal with low boiling liquids, melted solids, and viscous materials. C—9.

Oxalic Acid: Production and Uses. A. G. Arend. *Chem. Prod.*, 1951, 14, No. 1, 12-14. The extraction of oxalic acid from sawdust is described and some of the industrial applications of this acid are indicated. C—9.

Peptides: New Synthesis. G. W. Kenner. *Chem. & Ind.*, 1951, No. 1, 15. A new synthesis of peptides, which does not involve the preparation of carboxylic esters, is briefly described. The synthesis depends on the reaction between an amino acid, or peptide, and the mixed anhydride of the carbobenzoxy derivative with sulphuric acid, in homogeneous aqueous solution. C—9.

Plastics: Choice of New Solvents. Anon. *Industr. Chem.*, 1950, 26, December, 542-543. Some new solvents that have been introduced to meet the growing demands of the plastics industry, are discussed. C—9.

Rubber: Deterioration. Anon. *Pract. Engng*, 1951, 23, No. 567, 63-64. Some of the agencies which produce deterioration in rubber are indicated, and methods of extending the life of rubber are mentioned. C—9.

The Iodoform Reaction. H. Booth and B. C. Saunders. *Chem. & Ind.*, 1950, No. 51, 824-825. A number of organic compounds outside the range usually accepted as giving the iodoform test have been investigated to determine their response to this test. From the results, a number of "rules" relating to the applicability of the iodoform test have been drawn up. C—9.

Water Trap for Vacuum Line. D. Geoghegan. *Chem. & Ind.*, 1951, No. 5, 94. A simple water trap, for preventing the entry of water into vessels evacuated by means of a water pump, is described. C—9.

Bicolloids and Food Products: Retention of Water after Desiccation. D. A. A. Mossel. *Rec. Trav. Chim.*, 1950, 69, No. 7/8, 932-934. Experiments have been carried out to determine the percentage water retained by bicolloids and food products after desiccation by standard open oven methods. Some results are presented. C—9.

Buffer for High *pH* Measurements. W. M. Tuddenham and D. H. Anderson. *Analyt. Chem.*, 1950, 22, No. 9, 1146-1148. A calcium chloride-hydroxide buffer system has been devised having a reproducible *pH* in the range 11 to 12·65, depending on the concentration of calcium chloride. The precision of glass electrode measurements in this range has been studied. C—9.

Cellulose: Heat of Wetting and Specific Heat. M. Wahba and S. Nashed. *Nature*, 1950, 166, No. 4232, 998. The heat of wetting of dry cellulose in water has been measured at temperatures between 0° and 40° C., and has been found to decrease as the temperature is increased. This effect (which means that the heat capacity of the system is greater after wetting than before) is considered to be due to an increase in the specific heat of the water and the cellulose caused by the depolymerisation of these substances. C—9.

Cobalt Naphthenate: Adsorption by Cellulose Fibres. R. R. Coupe and W. H. Banks. *Research*, 1950, 3, No. 11, 528-530. Preliminary investigations of the adsorption by cellulose fibres of cobalt from solutions of cobalt naphthenate in oil are reported. The experiments were carried out using acid and non-acid filter paper as the adsorbent, and they indicate that the acidity of the paper influences the adsorption of cobalt. C—9.

Cotton Cellulose and Derived Oxycelluloses: Part VII, Ion-Exchange Reactions with Basic Dyes. G. F. Davidson. *J. Textile Institute*, 1950, 41, No. 10, T361-380. The affinities of the cations of a number of basic dyes for the carboxyl groups of acidic oxycelluloses have been compared by means of measurements of the absorption of dye cations in competition with the sodium ion or with another species of dye cation, and by means of chromatographic investigations of the displacement of dye cations from combination with an oxycellulose by sodium ions. The exchange reactions conform to the equation $R = Kr^p$, where R and r are the ratios of the concentrations of the competing cations in the cellulose and solution phases, K is a constant, and p is a constant less than unity. C—9.

Diffusion Constant: Determination. L. A. Walker. *Science*, 1950, 112, No. 2921, 757-758. A method for the determination of the diffusion constant of a substance in solution is described. The lower half of a test tube is filled with a solution of the substance prepared in radioactive form. A layer of solvent is placed on top of the solution, and the ensuing diffusion of the radioactive solute

into the solvent is followed by means of a Geiger counter. The "field of view" of the counter is restricted to a thin layer by means of a narrow slit, and the tube can be moved up or down with respect to the slit so that different sections of the solvent can be examined. C—9.

Linear Polyesters: Viscosity-Molecular Weight Relationships; Fibre-forming Factors. ("Über lineare Polyester.") H. Batzer. *Makromol. Chem.*, 1950, 5, No. 1, 5-82. By employing new methods of polycondensation and fractionation, polyesters with a molecular weight of up to 1,000,000 have been obtained. Molecular weights of various products have been measured by osmotic methods and end-group determinations; these have indicated that the polyesters examined had no branch structures. However, they did not obey Staudinger's simple viscosity law, but tended to follow a relationship such as that proposed by Debye and Sadron. Good fibre formation by polyesters appears to be dependent not only on the chain-length of the molecule but also on its polarity, the effect of which, however, is considerably modified by the spatial arrangement of the molecules composing the fibre. The general conclusion is that the fibre forming properties of a polymolecular substance depend on the actual length of the longer-chain molecules, but that the shorter molecules are important in that they behave as "internal plasticisers". C—9.

Molecular-weight Distribution: A Shortened Fractionation Procedure. ("Über eine abgekürzte Fractioniermethode zur Bestimmung von Molekulargewichtsverteilungen.") G. V. Schulz. *Makromol. Chem.*, 1950, 5, No. 1, 83-94. A method is described by means of which the form of the molecular-weight distribution curve can be obtained as an approximation. Essentially, the procedure involves the determination of the average degree of polymerisation of the whole, and the proportion by weight and average degree of polymerisation of an upper and a lower fraction. The theory of the procedure is described and conclusions are drawn as to applicability of the method. It is shown that, where the range of distribution is narrow, the results are unreliable, but almost ideal coincidence with the continuous curve is attainable where the range is broad. C—9.

Polar Hydrocarbon Molecules: Structure of Monolayers and Multilayers on Solid Substrates. H. T. Epstein. *J. Phys. Coll. Chem.*, 1950, 54, No. 7, 1053-1069. Monolayers and multilayers of the normal fatty acids have been prepared on solid substrates and examined by electron microscopy and electron diffraction. The main result is the observation that the molecules are grouped in two-dimensional micelles. An order of magnitude theory of micelle structure is developed, which relates the micelle diameter, the observed maximum tilt of molecules in a monolayer and the length of the molecule. "Skeletonised" films are examined and a mechanism for "skeletonisation" is proposed. C—9.

Polystyrene Solutions: Dependence of Rates of Diffusion on Concentration. Anita F. Schick and S. J. Singer. *J. Phys. Coll. Chem.*, 1950, 54, No. 7, 1028-1044. Two factors contribute to the concentration dependence of the diffusion rate of macromolecules in solution: the thermodynamic factor, which usually tends to increase it, and the hydrodynamic factor, which always decreases it, with increasing solute concentration. This hypothesis which has previously been tested with a series of fractions of cellulose acetate in acetone,[1] has now been further tested with polystyrene solutions. A series of four polystyrene fractions in butanone and carbon tetrachloride, and another fraction in six solvents, have been investigated by means of diffusion, viscosity, osmotic pressure, and sedimentation experiments. The results are reported and discussed. ([1]See Singer, *J. Textile Institute*, 1947, 38, A459.) C—9.

Water Separator. R. N. Blomberg and W. F. Bruce. *Science*, 1950, 112, No. 2918, 655. An improved form of receiver is described for the separation of water in the condensate obtained when water is removed from a mixture by azeotropic distillation. C—9.

Aqueous Sols: Electron Microscopic Study. M. R. A. Rao. *Proc. Phys. Soc.*, B, 1950, 63, Part 12, 980-981. Electron micrographs are shown for aqueous sols containing the following colloidal suspensions: graphite, stearic acid, vanadium pentoxide, and sulphur. The results of the examination explain certain divergences noticed during the measurement of the depolarisation of light scattering in these colloidal solutions. C—9.

Casein and Zein Fibres: Absorption of Strong and Weak Acids. ("Die Aufnahme von starken und schwachen Säuren durch Kasein- und Zeinfaser.") E. Elöd and H. G. Fröhlich. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 40-43. It had previously been established that the absorption of both strong and weak acids by protein fibres, such as wool and silk, increased with decreasing *pH*, though a pause was observed at about *pH* 0·8 in the case of the strong acids exemplified by hydrochloric acid. The resumption of absorption at about *pH* 0·7 has been attributed to salt formation within the peptide linkage. Similar acid-absorption behaviour has been observed in the case of synthetic polyamides, and, in the present investigation on casein and zein fibres, where the effect of the presence of formaldehyde groups (after stabilisation by formaldehyde) is examined with a view to finding further evidence as to the nature of the salt formation. C—9.

Cellulose Acetates: Solubility and Structure. F. Howlett and A. R. Urquhart. *Chem. & Ind.*, 1951, No. 5, 82-87. This is a review dealing principally with the way in which the main structural features of cellulose esters determine their solubility properties. There are 43 references to the literature. C—9.

Cellulose Polymerisation Determination: Standardised Staudinger Method. ("Bestimmung des Polymerisationsgrades von Zellulose nach Staudinger.") FaChemFa Committee. *Melliand Textilber.*, 1951, **32**, No. 1, pp. 39-40. Conditions and apparatus are prescribed for a standard method of determination of the degree of polymerisation in cellulose. The method consists essentially in determining the viscosity of a dilute solution of the cellulose in Schweitzer's reagent, the evaluation of the data being based on Staudinger's viscosity relationship. Details are given for the preparation of the copper hydroxide, and the construction of the viscometric apparatus is described and illustrated. C—9.

"Plasticisation": Recent Developments. D. Faulkner. *Brit. Plastics*, 1950, **23**, December, 183-189. A review is given of recent developments in fundamental studies of plasticiser action by application of thermodynamics to polymer-plasticiser interaction, and in the synthesis of new plasticisers. Particular reference is made to the "plasticisation" of polyvinyl chloride. A bibliography of 69 references is given. C—9.

Substantive Dyes: Absorption by Ferric and Aluminium Hydroxides. A. M. Koganovsky. *Colloid J. U.S.S.R.*, 1949, **11**, 237-243 (through *Brit. Abstr.*, A1, 1950, June, 355). The absorption isotherms of highly dispersed colloidal solutions in 0·01 N sodium chloride of Congo-red, water-blue, and indigo-carmine (anionic dyes), and neutral red (cationic), by ferric and aluminium hydroxides have been investigated. The anomalous step-like character of the absorption isotherms of these colloids have been studied, and an explanation is suggested. C—9.

Sugar Solutions: Determination of Water by Desiccation. T. J. Mitchell. *Chem. & Ind.*, 1950, No. 51, 815-817. An examination has been made of methods of determining water in sugar solutions by means of desiccation. Solutions of sucrose, glucose, and levulose were dried at room temperature (*a*) in a static atmosphere, (*b*) in a stirred atmosphere, using sulphuric acid as drying agent. Celite or sand was used as absorbing medium, and in one case rolls of filter paper were used. Similar tests were made with golden syrup. The results of 21 tests are presented, from which recommendations concerning test procedure are made. C—9.

Bleached Jute: Photochemical Discolouration; Effect of Urea-Formaldehyde Treatment. H. J. Callow. *J. Textile Institute*, 1950, **41**, No. 10, T404-406. The protecting action of urea-formaldehyde treatment against the photochemical discolouration of bleached jute fibres has been examined. When the reactive phenolic or enolic groups in lignin were blocked by methylation (a treatment giving partial protection to bleached jute) no further protection was achieved when the methylated sample was further treated with urea-formaldehyde. From this it is concluded that the inhibiting effect of the resin treatment is bound up with the photochemical reactions of the lignin. C—9.

Natural Colour Photographs in Colloidal Silver. R. D. Bensley. *Science*, 1950, **112**, No. 2915, 553-557. A patented process is described for the production of natural colour photographs on ordinary photographic plates or films designed for the production of negatives or positives in black and white. The method

depends on the fact that any black-and-white photographic image in gelatin can be converted by simple chemical procedures into a variety of colours of colloidal silver. C—9.

High Polymers: Degradation. H. W. Melville. *Dyer*, 1951, **105**, No. 1, 24-26. The degradation of high polymers by the action of heat and light is discussed. Three ways in which a large polymer might be broken down are considered and an indication of the evidence for these mechanisms is given. C—9.

Colour Densitometer. Macbeth Corp. *Text. World*, 1950, **100**, November, 184. A new instrument for the measurement of colour densities, including reflection and transmission densities, is announced. It is known as the Macbeth-Ansco colour densitometer. C—9.

Transmission and Reflection Photoelectric Densitometer. Evans Electro Selenium Ltd. *Brit. J. Photogr.*, 1950, **97**, No. 4723, 609. A description is given of an instrument for measuring the density of photographic prints either by reflected or transmitted light. The colour response of the instrument is roughly similar to that of the eye. C—9.

Principles of Colour Sensitometry. Anon. *Brit. J. Photogr.*, 1951, **98**, No. 4731, 29-32. A report of the Colour Sensitometry Committee of the Society of Motion Picture and Television Engineers is reported. C—9.

Stroboscopic and Other Optical Methods of Observing High-speed Printing. ("Die Beobachtung der laufenden Stoffbahn bei schnellaufenden Zeugdruckmaschinen mit Hilfe stroboskopischer und anderer optischer Verfahren.") B. Richter. *Melliand Textilber.*, 1950, **31**, No. 6, 424-426. A method of automatically controlling the flash sequence of a flash-stroboscope depends on allowing for the number of repeats per second, properties of the human eye, and over-all brightness of the surroundings. Details are given of the electrical circuit and of the mode of operation. C—9.

Electron Microscopy: Sectioning Techniques. J. Hillier and M. E. Gettner. *Science*, 1950, **112**, No. 2914, 520-523. Recent improvements in the cutting and mounting of ultra-thin sections for electron microscope examination are discussed. The cutting of serial sections is also dealt with. C—9.

Instrumentation in Perspective. W. A. Wildhack. *Science*, 1950, **112**, No. 2914, 515-519. The development of instrumentation as the "common denominator" of the sciences is discussed. Taking a general view the author analyses all types of measurement into six stages, and indicates some of the possible lines of future development of instrumentation. C—9.

Loaded Column: Determination of Critical Load. M. D. Brisby. *Engineer*, 1951, **191**, No. 4956, 82-84. Considering three different curves for the "virtual displacement" of a loaded column, equations for the critical load are derived, and are found to be almost identical in each case. Some examples of the use of these expressions are given. C—9.

Optical and Electron Microscopes: Developments. F. A. Vick. *Sci. Progr.*, 1950, **38**, No. 152, 692-698. A brief review is given of recent developments in electron and optical microscopy. References to the relevant literature are given. C—9.

Phase-contrast Microscopy of Objects of Elliptical Cross-section. ("Zur Abbildung zylindrischer Phasenobjekte elliptischen Querschnittz.") H. Wolter. *Ann. Phys.*, 1950, [Series 6], **7**, Nos. 3-4, 147-156. The accuracy of image dimensions and shape as obtained by phase-contrast and dark-field methods in the microscopical investigation of objects of elliptical cross-section, as distinct from those of rectangular cross-section, has been found to be good provided that the strict limits, imposed by the procedures, are not exceeded. In practice, however, the necessity for brighter images than those which can be obtained under the prescribed conditions, gives rise to halation, dimensional errors, and faulty portrayal of internal structures. The schlieren process does not give as true an image but the evalution of shape is easier than in the above processes. C—9.

Physics of Fibres. W. R. Moore. *Dyer*, 1950, **104**, No. 7-10, 366-367. A brief account is given of some aspects of the physics of fibres including methods of examination (X-ray diffraction and electron microscopy) and swelling action. C—9.

Radioactive Isotopes: Industrial Uses. H. Seligman. *Dyer*, 1950, **104**, No. 11, 462-463. Some examples of the use of radioactive isotopes in industry, including the textile industry, are described. C—9.

Ultrasonic Energy. A. E. Crawford. *Electronic Engng*, 1951, **23**, January, 12-18. After a brief summary of the elementary theory of ultrasonic waves, various practical methods of generating ultrasonic energy are described. C—9.

X-Ray Diffraction Analysis: Preparation of Extruded Specimens. L. J. E. Hofer, W. C. Peebles, and P. G. Guest. *Analyt. Chem.*, 1950, **22**, No. 9, 1218-1219. Details are given for the construction of an apparatus for the extrusion of specimens (2 to 3 mg. weight) for X-ray diffraction analysis. C—9.

An Interferometer Microscope. J. Dyson. *Proc. Roy. Soc.*, **A**, 1950, **204**, No. 1077, 170-187. Some of the drawbacks of conventional phase contrast microscopy are enumerated, and the desirability of an interferometer microscope is indicated. A number of ways of achieving this are described, together with their merits and drawbacks. A new type of interferometer microscope is described, together with its operational procedure. The conditions covering coherence in the object plane are investigated, and a simple approximation for evaluating the coherence is derived. A number of photo-micrographs are presented to illustrate contrast arising from phase or amplitude objects. Finally, a method for the accurate measurement of the optical thickness of an object is described. (From author's summary.) C—9.

Cellulose Acetate Films: Swelling and Diffusion; Interferometric Study. C. Robinson. *Proc. Roy. Soc.*, **A**, 1950, **204**, No. 1078, 339-359. An interferometer technique for the quantitative study of swelling and diffusion in transparent high polymers, and a method of determining the concentration distribution from the fringe system, have been developed. The concentration—distance curves in the system chloroform-stretched cellulose acetate have been determined at two different temperatures with a view to estimating activation energies over a range of concentrations. C—9.

Coaxial-Cylinder Elastoviscometer. J. G. Oldroyd, D. J. Strawbridge, and B. A. Toms. *Proc. Phys. Soc.*, **B**, 1951, **64**, Part I, 44-57. An instrument is described which was designed to measure the elastic and viscous properties of liquids, particularly solutions of high polymers. The liquid is contained in a narrow annulus between two long vertical cylinders. The outer cylinder can be driven in steady rotation at a known speed, or in harmonic angular oscillations of known amplitude and frequency. An example is given of the behaviour of a typical polymer solution in both types of experiment. C—9.

"Diacam" Rotary Switch. Craig and Derricott Ltd. *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1668. A new rotary switch is announced. C—9.

Electron Lenses: Correction of Spherical Aberration Using Foil Element. U. F. Gianola. *Proc. Phys. Soc.*, **B**, 1950, **63**, Part 12, 1037-1039. A mathematical analysis is made of the conditions for correction of spherical aberration of an electron lens by means of conducting foils. Some of the problems involved in the design of such foils are indicated. C—9.

Electron Microscopy: Preparation of Paste and Powder Specimens. F. Schofield. *Brit. J. Appl. Phys.*, 1951, **2**, No. 1, 18-19. A new method of preparing specimens of pastes and powders for examination by the electron microscope which avoids aggregation of the solid particles, is described. C—9.

Electron Microscopy: Replica Techniques. A. W. Agar and R. S. M. Revell. *Brit. J. Appl. Phys.*, 1951, **2**, No. 1, 8-11. Precautions for obtaining clean and reliable replicas for the study of large areas of metal surfaces are outlined. Modifications to the backed-replica technique, and the application of preshadowing in metallographic studies, are described. Several electron micrographs of metal surfaces are shown. C—9.

Electrostatic Focussing System: Application to Fine-Focus X-Ray Tube. W. Ehrenberg and W. E. Spear. *Proc. Phys. Soc.*, **B**, 1951, **64**, Part I, 67-75. A description is given of an electrostatic focussing system by which electrons emitted from the tips of a hairpin filament are re-united at a distance of 2 to 3 cm. A fine-focus X-ray tube designed around this system is also described. C—9.

Examination of Fibre Surfaces with the Electron Microscope. ("Zur Kenntnis des Waschvorganges. VIII. Über elektronenmikroskopische Untersuchungen an Faseroberflächen.") W. Kling and H. Mahl. *Melliand Textilber.*, 1950, **31**, No. 6, 407-413. The surfaces of various fibres including cotton, rayon, silk, wool, and nylon, have been examined, after careful cleaning, by means of an electron microscope. The examination was conducted as part of an investigation into the removal of dirt by means of various agents, and similar electron microscope investigation on soiled fibres will be reported later. An outstanding feature of the present investigation was the unexpected discovery that the fibrillae of the secondary wall of cotton could be identified. The procedure is described and several photomicrographs of the fibres are given. C—9.

Glass: Breaking Strength. ("The Application of Rate-Process Theory to Glass. Part I.") F. B. Hodgdon, D. A. Stuart, and F. E. Bjorklund. *J. Appl. Phys.*, 1950, **21**, No. 11, 1156-1159. An equation relating the ultimate strength of glass and porcelain to time under load is derived, using the rate-process theory originally derived by Eyring for textile fibres. The agreement between theoretical and experimental results is excellent. C—9.

Micrometer Screws: Autographic Method of Checking. F. H. Rolt. *Engineer*, 1951, **191**, No. 4957, 117-119. An apparatus for automatically recording the accuracy of the pitch of a micrometer screw is described. C—9.

New X-Ray Tube. W. E. Stevenson. *Cath. Press*, 1950, **7**, 2-5 (through *Sci. Abstr.*, **B**, 1950, **53**, December, 574). A new, light, rotating anode X-ray tube, known as the "Dynamax 20", is described. C—9.

Photographic Emulsions: Effect of Pressure and Friction. A. C. Moore. *Brit. J. Appl. Phys.*, 1951, **2**, No. 1, 21-25. The production of a latent image in photographic emulsions by friction, and the desensitisation of the emulsions to subsequent illumination, both by friction and inhomogeneous pressure, has been investigated. The experimental work is described (some latent images are shown), and a new explanation for the phenomenon is offered. C—9.

Pulse Generator of Fixed Repetition Rate. F. A. Benson and R. M. Pearson. *Wireless Engr.*, 1950, **27**, December, 285-288. A simple pulse generator with a fixed repetition rate which can be built up from a few normal laboratory components is described. C—9.

Removal of Static in Textile Processing. ("Über die Beseitigung der statischen Elektrizität in der Textilindustrie.") G. Neuhof. *Text.-Praxis*, 1950, **5**, No. 4, 224-228. The factors leading to the generation of electrical charges on textile materials during processing are explained, and a short list of the more commonly used fibres is arranged in order of transition from positive to negative charge generation; that is, when any two of the materials are rubbed together, the one placed higher in the list will develop a positive charge whilst the other becomes negative. On this basis, where cotton comes into frictional contact with viscose rayon, the former would carry a positive charge, as against the latter's negative. Were, however, viscose rayon to be brought into similar contact with, say, steel or synthetic rubber, then the former would take on a positive charge and either of the latter would become negative. Various devices for removing these charges are described in some detail. C—9.

Rotation Viscometer, VIR-45. P. A. Ivanov and G. V. Aronovich. *Zavodskaya Lab.* (*U.S.S.R.*), 1947, **13**, No. 2, 237-39 (through *Kodak Mthly Abstr. Bull.*, 1950, **36**, No. 10, 504). A rotation viscometer is described, in which the viscous pull on a rotating motor shaft is measured in terms of the change in the dynamic resistance of the armature of the shunt motor. A calibration curve is drawn for the variation with viscosity of the reading of the potentiometer of the Wheatstone Bridge set up, one resistance of which is the armature of the motor. C—9.

Soda-Celluloses of Jute: X-Ray Examination. R. R. Mukherjee and H. J. Woods. *J. Textile Institute*, 1950, **41**, No. 11, pp. T422-428. The transitions between cellulose I and soda-cellulose of jute have been studied at room temperature by X-ray examination. When jute is treated without tension at 20° C. in caustic soda solutions of concentration greater than 10 per cent., there is a complete transformation of the crystalline material to soda-cellulose. Removal of the alkali, by washing at room temperature, leads to a partial reconversion of the cellulose to the native modification. This effect is ascribed to the stabilising

influence of lignin, which may form cross-links between the cellulose chains in the neighbourhood of the crystallites. Several X-ray photographs are shown. (From author's summary.) C—9.

Transient Heat-Conduction Problems: Solution by Air-flow Analogy. M. B. Coyle. *Brit. J. Appl. Phys.*, 1951, **2**, No. 1, 12-17. An air-flow analogy method has been developed for the solution of problems of heat conduction where conductivity and specific heat vary appreciably with temperature. The principles of the method are summarised and a description is given of a small prototype apparatus that has been constructed. C—9.

X-Ray Dosage Rate Meter for Laboratory Use. W. B. Lurie. *Cath. Press*, 1950, 7, 22-25 (through *Sci. Abstr.*, **B**, 1950, 53, December, 574). A portable, self-contained meter, covering a wide range of intensities and wavelengths, is described. C—9.

X-Ray Wavelength Distributions: Determination from Absorption Data. J. R. Greening. *Proc. Phys. Soc.*, **A**, 1950, 63, Part II, 1227-1234. Some theoretical foundation is given to an existing empirical method which may, in certain limited cases, be used to determine X-ray wavelength distributions from absorption data. The absorption curve function and the wavelength distribution function have the same relationship as a Laplace pair, the absorption curve function being the Laplace transform of the wavelength distribution function. By using the additive property of Laplace transforms, the absorption method of determining spectral distributions is made of general application. The experimental requirements are discussed. (From author's abstract.) C—9.

Outlying Observations: Tests of Significance. F. E. Grubbs. *Annal. Math. Stat.*, 1950, 21, No. 1, 27-58. Statistics are proposed for testing the significance of the largest or smallest observations in a sample of size n from a normal population. The exact distributions of these statistics are derived and tables of percentage points are given. A detailed tabulation of the probability integral of the extreme minus mean for normal samples is included. The efficiencies of the tests have not been completely investigated. C—9.

Percentage Points: Some Estimates and Tests Based on the r Smallest Values in a Sample. J. E. Walsh. *Ann. Math. Stat.*, 1950, 21, No. 3, 386-397. The author investigates the properties of some well-known non-parametric estimates and tests of the smaller population percentage points when only the r smallest values in a sample are known. It is shown that for normal populations these estimates and tests have high efficiency for percentage points less than 0·1. The results have application to "life" testing in which the variable investigated is the time to failure and for which the r smallest values can be obtained without the necessity of obtaining the remaining values of the sample. C—9.

Range: Applications of the Mathematical Theory. ("Applications de la statistique mathématique des marges (ranges).") L. Goossens. *Rayonne*, 1950, 6, No. 3, 101-108; No. 4, 89-91, 93-99. This is an account of results in the mathematical theory of the range. A table of the main parameters associated with the distribution of the mean range is given for values of n from 2 to 10. The use of the control chart for ranges and of various inspection plans based on the range is discussed, using yarn irregularity as an illustration. C—9.

Ratio of Two Ranges: Sampling Distribution. R. F. Link. *Ann. Math. Stat.*, 1950, 21, No. 1, 112-116. The sampling distribution of the ratio of two ranges from independent samples is considered. Tables are given which may be used for testing the hypothesis drawn from normal populations with the same variance. The performance of the test relative to the F test is investigated. C—9.

Tetrachoric Correlation Coefficient: Assumptions Underlying its Use. S. Vaswani. *Sankhyā*, 1950, 10, Part 3, 269-276. The use of the tetrachoric correlation coefficient for factor analysis of qualitative tests depends on the assumption that the bivariate distribution of the underlying quantitative scores is normal. The author shows that if the underlying distribution is not normal it is not always possible to find a transformation to make it so. It is also shown that when the tetrachoric correlation coefficient is computed from a 2×2 contingency table, the normality of the joint distribution cannot be verified. A test is devised to check whether a given $2 \times 2 \times 2$ contingency table can have arisen from a given trivariate normal population. C—9.

Linear Relation Between Two Variables Which Are Subject to Error: Identifiability. Olev Reiersol. *Econometrica*, 1950, **18**, No. 4, 375-389. The problem of the identifiability of a linear relation between variables subject to error is examined in two different two-variable models in which the errors are independent of the "true" variables. In one model, the errors are specified to be jointly normally distributed, and in the other, to be stochastically independent. In both cases, necessary and sufficient conditions for identifiability are found. A summary of previous results is included. (Author's summary.) C—**9.**

Three- and Two-pinned Arches. W. Morse. *Pract. Engng*, 1951, **23**, No. 565, 6-7; No. 566, 44. Examples are given to show the general methods employed in the solution of problems connected with three- and two-pinned arches. C—**9.**

Wool Fibres: Crystalline Structure of the Cuticular Sheath. N. Peacock, J. Sikorski and H. J. Woods. *Nature*, 1951, **167**, 408. Reference is made to the experiments in which Alexander, Earland and Happey found that a β-type X-ray photograph was given by the insoluble, sheath-like residue, presumably the remains of the cuticle, obtained by treating wool with peracetic acid and then with ammonia (*J. Textile Institute*, 1951, **42**, A40). This has not been confirmed by the present authors. W—**9.**

10—ECONOMICS

Assessment of Wages in the Textile Industry. ("Beitrag zum Problem des gerechten Lohnes in der Textilindustrie.") H. Walter. *Textil-Praxis*, 1950, **5**, No. 3, 172-174. A method is described for adjusting piece-work rates according to the nature of the materials used, the type of loom, *etc.* Poor material can cause serious loss of earning power but direct compensation payment in respect of time taken is inadvisable as it may lead to reduced effort on the part of a less honest worker. The proposed method is based on the observed weaving rate of 1,000 picks. C—**10.**

British Rayon Industry: Survey of 1950 Trade. Anon. *Text. Whly*, 1950, **46**, No. 1188, 1662, 1664, 1666. The production and consumption (home and export) of British rayon yarn and fabrics during 1950 is briefly surveyed. The nylon trade is also considered and the production of rayon in other countries is mentioned. C—**10.**

Cotton Growing in Tanganyika in 1948. *Ann. Rept. Tanganyika Dept. Agriculture*, 1948, 11. Incidence of rainfall and production in the various Provinces is described, and a statement is given showing the production of lint in bales of 400 lb. in the five Provinces, compared with the average production for the previous ten years. C—**10.**

Cotton Industry: Size of Firms. R. Robson. *Manchr. Statistical Soc.* 1949, November. (34 pages.) Tables are given showing (1) number of units in the industry by type of unit; (2) multiple unit firms by type of firm; sizes of the following: (3) cotton spinning mills, by balanced count and date of erection, (4) spinning mills by type, date and count, (5) waste spinning and waste spinning-doubling by balanced count, (6) combined spinning-weaving mills, (6*a*) combined spinning-weaving-doubling mills, (7) weaving sheds, (8) spinning firms, (9) weaving firms, (10) doubling firms, and (11) finishing firms. The principles on which the tables are based are explained, and factors governing size are commented on. C—**10.**

Cotton Purchase Methods. Raw Cotton Commission. *Text. Whly*, 1951, **47**, No. 1190, 26, 28, 64. The report of the Raw Cotton Commission on methods of purchasing raw cotton (by bale or by weight) is presented. C—**10.**

Inflation and Taxation: False Profits in Cotton Industry. C. R. Hargreaves. *Text. Merc.*, 1951, **124**, No. 3224, 93, 95, 97. The effects of the present inflation of prices are considered with respect to the cotton industry, and attention is drawn to the falsity of "paper profits" made during inflation. It is pointed out that a dangerous situation has been created for the industry by the Government's taxation policy in relation to present inflated stock values, and the question of the effect of a rapid fall in prices is raised. C—**10.**

Joint Consultation. Sir Graham Cunningham. *Brit. Management Rev.*, 1950, **9**, No. 2, 60-65. The author, Chairman of Triplex Safety Glass, describes the working of this firm's joint production and advisory committee. He stresses the need to

keep the foremen informed of proceedings, and the educative value of addresses to the committee by senior executives about their branch of the firm's work. C—**10.**

Jute Industry: French Appraisal of British Production. ("Ce qu'il faut savoir sur l'industrie du jute en Grande-Bretagne.") M. Dont. *L'industrie text.*, 1950, **67**, 142-148. A survey of the British jute industry compares pre-war and post-war production, and the number of operatives employed. The potential output and present efforts to increase production are discussed. British technical processes are described. C—**10.**

Labour Turnover: Financial Aspects. P. H. Cook. *Brit. Management Rev.*, 1950, **9**, No. 2, 51-59. Loss to industry by high turnover is analysed into the elements of production loss and increased overheads. The author refers to an earlier article which gives in detail the method developed for assessing the financial effects of labour turnover. C—**10.**

Methods Time Measurement. H. Maynard. *Management News*, 1950, **2**, No. 3, 3-6 (through *Management Abstr.*, 1950, **3**, No. 9, 359-360), and *Modern Management* (N.Y.), 1948, **8**, No. 5, 42-46 (through *Management Abstr.*, 1948, **1**, No. 2, 51-52). A procedure is described which breaks down any manual operation into the basic motions required to perform it. Times based on an analysis of films of industrial operations have been assigned to each element. This technique eliminates rating. Human relations are improved because methods are studied, not the operator, eliminating judgement of the worker implied in rating. C—**10.**

Motion Study and the Chronocyclegraph. Anne G. Shaw. *Modern Management* (N.Y.), 1948, **8**, No. 5, 9-12 (through *Management Abst.*, 1948, **1**, No. 2, 49.) The many situations where this apparatus is of value are listed. It is claimed that it is the only equipment which can record on paper the subtle difference between a good and a bad movement, and that it gives a picture of the job as a whole, where films and charts can only show the parts. C—**10.**

Motion Study on the Shop Floor. G. P. Wade. *Time Study Engr*, 1950, **5**, No. 12, 373-377; 1951, **6**, No. 1, 22-30. This is an outline of the meaning and importance of motion study, with some reference to the pioneer work of the Gilbreths. Part II explains the detailed method of Motion Study Investigation and the value of process charts, with examples. C—**10.**

Motion Study, Psychology and Machine Operators. L. G. Fuchs. *Time Study Engr*, 1950, **5**, No. 8, 247; No. 9, 285-293; No. 10, 309-316; No. 11, 350-358. The author discusses the influence of motion study and psychology on tool and layout design; human attitudes and mental processes which have a bearing on the task of operating machines; inexpensive means of increasing efficiency by stimulating satisfaction in work, and the effect on the relationship between operator and efficiency engineer of applying these means. The author stresses the importance of touch perception and sense of distance and position in skilled operators, and also the incentive value of pleasurable movement, and the use of safety motions and "internal" guarding to supplement mechanical guarding. Details such as control position, distinctive lettering and simplified dial arrangement are described in Part II. C—**10.**

Productivity in the Textile Industry. ("Reflexions sur la productivité textile.") R. Thiebaut. *L'industrie text.*, 1950, **67**, March, 94-98. The author surveys the factors which must be taken into account when assessing "productivity". C—**10.**

Raw Cotton Supplies: Outlook for 1951. Anon. *Text. Wkly*, 1950, **46**, No. 1188, 1658, 1660. The outlook for world production and supply of raw cotton during 1951 is briefly surveyed. Some figures are given for the forecast production of Egyptian and American cottons, and for world production and supplies. C—**10.**

Raw Cotton Supplies: World Position 1950-51. Anon. *Text. Rec.*, 1950, **68**, November, 136. A brief survey is made of the probable state of world raw cotton supplies during the 1950-51 season. Although cotton production is estimated to be generally less than in the previous season, the British Empire is increasing its production C—**10.**

Rubber: Developments in the Last 50 Years. T. R. Dawson. *India-Rubber J.*, 1950, **119**, No. 23, 6-15. Developments in rubber and the rubber industry over the past 50 years are surveyed. C—**10.**

Starch Production in Tanganyika in 1948. *Ann. Rept. Tanganyika Dept. Agriculture*, 1948, 17. Production fell from 121 tons in 1947 to 82 tons in 1948 in the Eastern Province, and increased in the Southern Province from 12 tons in 1947 to 18·9 tons in 1948. C—**10.**

Stop-watch Time Study or Motion Time Standard Data? R. M. Barnes. *Modern Management (N.Y.)*, 1948, 8, No. 5, 46-49 (through *Management Abstr.*, 1948, 1, No. 2, 52). The two methods are compared, and it is concluded that stop-watch methods will never be completely replaced. Results are also given of a recent investigation into systems of standard data for elemental motions. Six companies co-operated, and charts and tables illustrate the findings in the total and in individual companies. C—**10.**

Textile Mill Management Problems. Anon. *Text. Whly*, 1951, 47, No. 1190, 18, 20. A report is given of a discussion held by mill managers on some problems of textile mill management. C—**10.**

Time Study Research, I and II—Rating. M. E. Mundell. *Time Study Engr*, 1950, No. 10, 319-324; No. 11, 361-365. (*To be continued.*) The author proposes a new method of rating, in which the two essential steps are reversed, so that first, pace is rated against an objective standard (preferably recorded by film) which is the same for all jobs regardless of difficulty, and a secondary adjustment for difficulty is made by a percentage increment obtained from tables of factors controlling the exertion required at a given pace. It is claimed that the use of films, one of standard pace and others of 5 per cent. variants, increased the accuracy of expert time study ratings from 19 per cent. to 64 per cent. within ±5 per cent. of correct value, and from 42 per cent. to 87 per cent. within ±10 per cent. of correct value. Parts III and IV will deal with secondary adjustments, and allowances, or empirical adjustments. (See also *J. Textile Institute*, 1951, 42, A193.) C—**10.**

Consumer Goods for the Home Market: Textiles. *Board of Trade J.*, 1950, 159, December, 1119-1121. These tables give in a consolidated form the consumer goods figures published at bi-monthly intervals in the *Board of Trade Journal*, and cover clothing, household linen, non-wool woven cloth and non-wool furnishing fabrics. C—**10.**

Cotton: Quarterly Statistical Review. *Cotton Bd. Tr. Letter; Stat. Suppl.* No. 20, 1950 40 pages. Figures for production, exports and imports for the United Kingdom (in the case of cotton and rayon finishing only, for Great Britain) are given for the first three quarters of 1950. The figures given for other territories vary; in some cases it appears that no 1950 figures are available. Earlier comparison figures are given for all territories, in most cases back to 1945; in some cases figures for some pre-war years are included. The tables are prefaced by a comparative analysis of the figures from different countries for the three quarterly periods under review. The general trend of output was upwards. C—**10.**

Cotton Textile Markets Strong. Anon. *Times Rev. Ind.*, 1951, January, 52. The position of the cotton industry is reviewed, and reference is made to supply difficulties, the Raw Cotton Commission's balance, the demand for cotton goods, high profits, paid holiday negotiations, the speedy agreement reached in the spinning wage claim, and the reasonably good labour situation. C—**10.**

Fine-Chemical Industry: Economics. J. D. Pratt. *Chem. & Ind.*, 1951, No. 3, 38-43. A survey is made of the economics of the British fine chemical industry, dealing with the size of the industry, employment figures, raw materials, research and development, schemes for expansion, imports, and employment in relation to capital and production capacity. C—**10.**

Hungarian Textile Manufacture. Anon. *Times Rev. Ind.*, 1950, November, 79. This is an account of the growth and development of the industry, and of how post-war difficulties have been overcome. Experiments in cotton growing are increasing, and trials are also being made with ramie, an Indian plant substitute for flax, and kenaf, a jute substitute already grown successfully in the U.S.S.R. C—**10.**

International Cotton Statistics for January 1st to July 31st, 1950. International Federation of Master Cotton Spinners' and Manufacturers' Associations. *Pamphlet*, 1951, January, 8 pages. Figures are given for world total cotton spindles; cotton mill consumption in thousands of bales; working hours, and rayon staple consumed. In all cases figures are given side by side with those for the preceding half-year. C—**10.**

Man-Made Fibres in Germany. Anon. *Times Rev. Ind.*, 1950, November, 54. This is a discussion of the progress made in West Germany. Tables are given showing the annual production of man-made fibres in Western Germany for the years 1948-50 and for 1936, and the annual export rate for 1949 and 1950. C—**10.**

Productivity in Industry. R. Beeching. *Text. Wkly*, 1951, 47, No. 1194, 302, 304, 306. A report is given of a lecture delivered to the British Association of Textile Mill Managers. The development of productivity in Britain and the U.S.A. since the end of the industrial revolution is traced, and the reports of the Anglo-American productivity teams are summarised and their implications examined. A discussion following the lecture is also reported (*ibid*, 306, 308). C—**10.**

Shortages in Rayon Raw Materials. Anon. *Times Rev. Ind.* 1951, January, 60. Shortages of sulphuric acid and cotton cellulose are discussed, and reference is made to the annual meeting of British Celanese. C—**10.**

Silk and Rayon Industry: Historical Development. ("The Heritage of Rayon and Silk.") J. Guthrie Oliver. *Silk & Rayon Rec.*, 1950, 24, No. 11, 1491, 1494, 1496. Continuing his survey* of the development of the silk and rayon industries, the author traces the growth of Listers of Manningham and of J. and N. Philips. (*For first part see *J. Textile Institute*, 1951, 42, A137.) C—**10.**

Swiss Textile Industry, 1949. ("Die Schweizerische Textilindustrie im Jahre 1949.") A. Fehrlin. *Text. Rdsch.*, 1950, 5, No. 9, 373-376. A survey of the Swiss textile industry during 1949 has been compiled on the basis of reports published by individual textile organisations. C—**10.**

Swiss Silk Industry—1949. ("Die schweizerische Seidenindustrie.") A. Fehrlin. *Text. Rdsch.*, 1950, 5, No. 10, 412. A survey is made of the Swiss silk trade during 1949. The influence of international tension on trading is discussed. C—**10.**

Textile Exports from Japan. Anon. *Brit. Rayon & Silk J.*, 1950, 27, November, 85-86. Tables are given for 1950, showing exports of rayon fabrics, production of rayon yarn and staple, and deliveries of rayon and silk. The article comments on the significance of the figures. C—**10.**

Textile Production in Britain in 1948. *Board of Trade J.*, 1950, 159, December, 1114-1115. The following tables are given (1) general summary of production, cost and employment figures; (2) stocks of finished products, materials and fuel; capital expenditure on (3) plant, machinery, vehicles, (4) new buildings and (5) employment, wages and salaries. C—**10.**

Vertical Organisation in the Textile Industry. G. Ullman. *Text. Mfr*, 1950, 76, December, 586-587, 591. This is a general discussion of the subject; reference is made to earlier articles on this subject by Dr. Ullman. C—**10.**

World Rayon Production and Consumption. J. Guthrie Oliver. *Silk & Rayon Rec.*, 1951, 25, No. 1, 29, 31, 32, 34. The 1950 world rayon production and consumption position is discussed, and relevant figures are presented for Britain, U.S.A., Belgium, France, Italy, Western Germany, Australia and Switzerland. A statistical survey is also made, and tables are given showing the British exports of transparent cellulose film, and rayon fabrics, to various countries. C—**10.**

World Rayon-Trade, 1950: Statistical Survey. Anon. *Silk & Rayon Rec.*, 1950, 24, No. 11, 1444, 1446, 1448. Recent trends in the world rayon trade are discussed. Among several tables of statistics is one showing the British percentage of world trade in rayon fabrics. C—**10.**

11—INDUSTRIAL WELFARE, INDUSTRIAL PSYCHOLOGY AND EDUCATION

Academic Research as a Career. Linus C. Pauling. *Chem. Engng News*, 1950, 28, No. 46, 3970-3971. The pursuance of academic research as a career is discussed with particular reference to chemical research. C—**11.**

Shirley Institute's Programme. Anon. *Times Rev. Ind.*, 1951, January, 10. A brief review is given of the Shirley Institute Year Book for 1950. C—**11.**

Smoke Elimination: Electrostatic Fly-Ash Precipitators. H. J. White, L. M. Roberts, and C. W. Hedberg. *Mech. Engng*, 1950, **72**, No. 11, 873-880. After dealing with the physical and chemical properties of fly-ash and the physical basis of electrostatic precipitation, the authors discuss, at some length, the design of precipitators. C—11.

Swiss Training in Technology. Anon. *Times Rev. Ind.*, 1951, January, 6-7. This is an outline of the structure of technical education in Switzerland, at the three levels of study, for posts of responsibility, pure technicians, and apprentices. C—11.

Textile Machinery: Design and Accident Prevention. Edward R. Schwarz. *Mech. Engng*, 1950, **72**, No. 12, 977-978. The fundamental causes of accidents are briefly analysed, both from the aspects of the operative and the machine. The designing of textile machinery to reduce sources of accidents is discussed. C—11.

The Pursuit of Science for Utilitarian Ends. J. Taylor. *Chem. & Ind.*, 1951, No. 4, 56-59. Some aspects of the question of the pursuit of scientific study and its relation to its utility are discussed, including the rôle of universities and industrial research establishments, and the training of scientists and technologists. C—11.

Productivity in Wool Textiles. A. R. Baines. *Text. Merc.*, March, 1951 (Supplement), 77-80. A description of the different ways in which the industry is tackling the problem of increasing production. Reference is made to recommendations from the Joint Production Committee, to the industry's motion study experiments, and to the work of the Wool Industries Research Association. W—11.

12—CONFERENCES AND EXHIBITIONS

British Rayon and Synthetic Fibres Federation: Manchester Exhibition. Anon. *Silk & Rayon Rec.*, 1950, **24**, No. 12, 1576, 1579, 1580; *Brit. Rayon & Silk J.*, 1950, **27**, December, 51-52. An account is given of an exhibition, held in Manchester by the British Rayon and Synthetic Fibres Federation, which featured various aspects of the uses of rayon and nylon. C—12.

Constructional Materials for the Chemical Industry. The Society of Chemical Industry. *Chem. & Ind.*, 1951, No. 4, 61-68. Abstracts of papers read at a conference on "Materials of Construction in the Chemical Industry" are presented. The 27 papers fall into the following groups: (1) concrete, bricks, tiles, stoneware, *etc.*, (2) timber and mineral insulating materials, (3) ferrous metals, (4) non-ferrous metals, (5) plastics and rubber, and (6) refractories, carbon, graphite, glass, and fused silica. C—12.

Fluid Flow: Institute of Physics Conference. M. W. Thring. *Brit. J. Appl. Phys.*, 1951, **2**, No. 1, 1-5. A report is given of the conference held by the Institute of Physics on "Some aspects of fluid flow" (25-28 October, 1950). Papers and discussions are summarised. A full report of the proceedings is to be published shortly. C—12.

International Silk Congress: Second Meeting. Anon. *Brit. Rayon & Silk J.*, 1950, **27**, December, 48-50; *Text. Rec.*, 1950, **68**, December, 69-70; *Silk & Rayon Rec.*, 1950, **24**, December, 1673, 1676, 1678. Reports are presented of the proceedings at the second International Silk Congress held in New York on October 16-20, 1950. C—12.

International Silk Congress, Section VIII: New York Meeting. S. G. Smith. *Dyer*, 1951, **105**, No. 2, 93-94. A brief report is given of the third meeting of Section VIII of the International Silk Association held in New York. The main items discussed were shade fastness of dyed silk goods and the weighting of silk. C—12.

Polymer Chemistry as Applied to Plastics. E. K. Rideal. *Chem. & Ind.*, 1950, No. 51, 818-820. The opening address to a symposium arranged by the Plastics and Polymer group of the Society of Chemical Industry is presented. The structure, formation, and properties of polymers are briefly considered with respect to plastics. C—12.

Textile Congress, Lille. Association of Textile Chemists (France). *Brit. Rayon & Silk J.*, 1950, 27, December, 64. A brief account is given of a congress at which papers were read on washing control of wool, properties of degraded cellulose, optimum *pH* in dyeing cotton, esterified derivatives of starch, and photographs on fabric. C—12.

Textile Research in Spain: Conference Report. Anon. *Fibres*, 1951, 12, No. 1, 31-32. Brief summaries are given of papers presented at a meeting of the Study and Research Section of the National Association of Textile Industry Engineers of Spain. C—12.

Bonded Fabrics. C. E. Coke. *Text. Mfr*, 1951, 77, January, 12-14. A summarised version is given of a paper presented at the Canadian Textile Seminar*, 1950. The paper deals with the types of fibres and bonding agents used in the production of bonded fabrics, and describes some of the properties of such fabrics. (*See *J. Textile Institute*, 1951, 42, A200.) C—12.

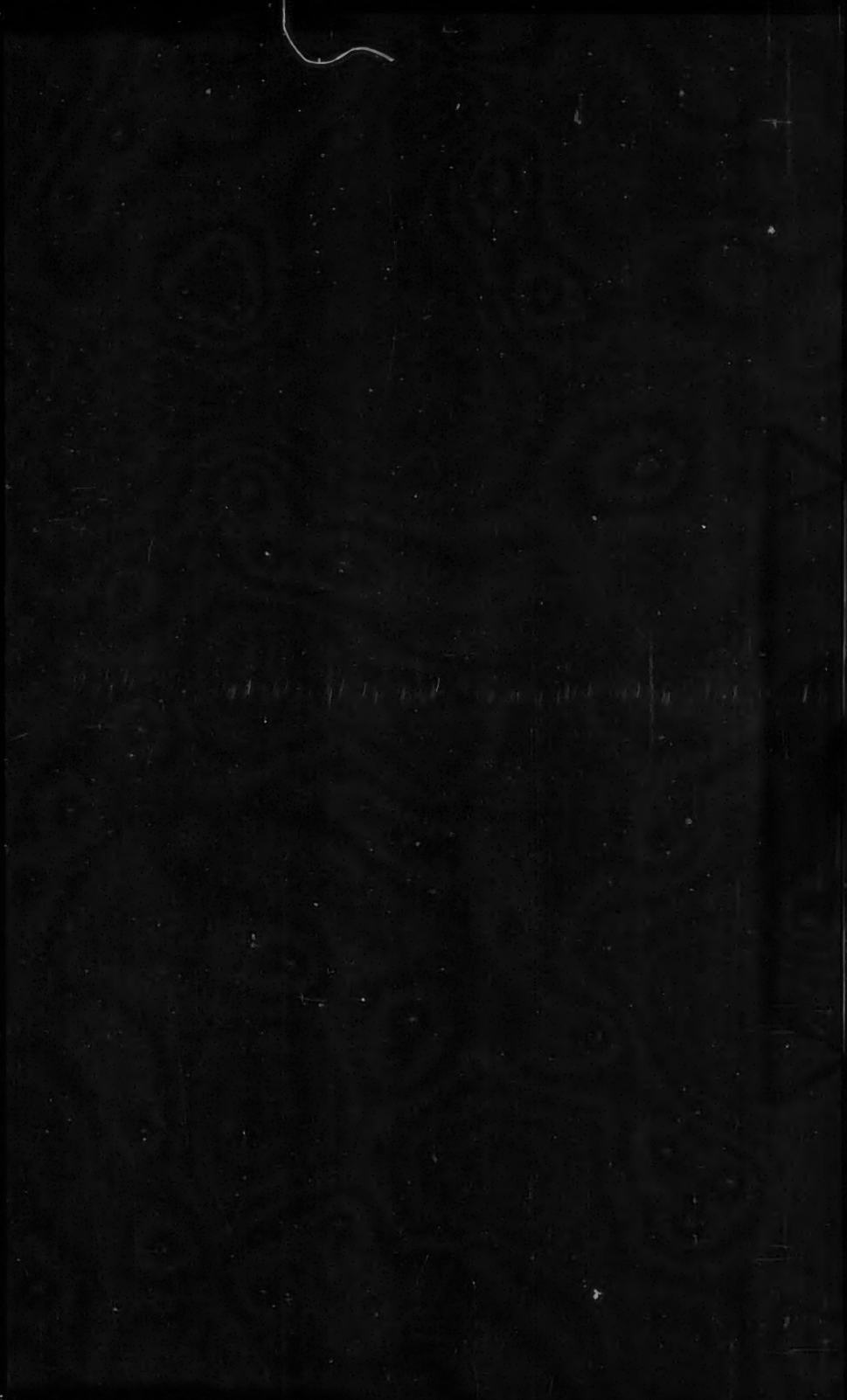
Paper-Plastics Conference. Anon. *Paper Trade J.*, 1950, 131, No. 19, pp. 19-21. A brief account is given of a conference arranged by the Plastics Committee of *TAPPI* (held in New York, October 19-20, 1950) at which papers on plastics in relation to papermaking were presented. C—12.

Pulp and Paper Manufacture: University of Maine Industrial Lectures. *Paper Trade J.*, 1950, 131, No. 22, pages as below. These papers, presented at a course on pulp and paper manufacture held at the University of Maine, U.S.A., include the following: "Peroxide Bleaching," pp. 203-204, 206, 208, 211; "Preparation of Chlorine Bleach Liquors for Paper Pulp," pp. 211, 212, 214; "Chlorine Bleaching of Chemical Pulp," pp. 216-217, 220-222; "Colour Engineering," pp. 250, 253, 255, 256; "The Rudiments of Paper Sizing," pp. 259-260, 262-263; "The Drying of Paper," pp. 278-279; "An Introduction to Printing Methods and Paper," pp. 316, 318, 320, 322, 323; "Paper Testing and Specifications," pp. 324, 326, 328-332, 335. C—12.

Second International Silk Congress at New York—1950. ("Le 2me Congrès International de la Soie s'est tenu à New-York.") Anon. *Bull. Soie Soieries*, 1950, 74, No. 3550, pp. 8, 11. The more important subjects discussed at the Congress included: means of increasing cocoon production and stabilisation of prices; stabilisation of silk prices; regular delivery of waste silk to spinners; silk propaganda; and, generally, methods for increasing utilisation of silk. Short extracts are given. (See *J. Textile Institute*, 1951, 42, A251.) C—12.

CORRECTIONS

Abstracts Section. 1951, Vol. 42, April.

The last four abstracts on page A193 and the first abstract on page A194 should be included in Section 10, Economics.

The reference at the end of the abstract entitled "Time Study Research. III. Secondary Adjustments", should read (See also *J. Textile Institute*, 1951, 42, A429).